

Family Leiognathidae

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Body oblong or elevated, more or less compressed. Head moderate or large, compressed, with bony ridges above, with nuchal spine, ~~or without and smooth~~. Snout short. Eyes lateral, moderate. Mouth extremely protractile, long premaxillary extensions lying in groove formed by bifurcation of occipital crest; when fully extended forms tube directed horizontally, dorsally or somewhat downwards. Basal end of maxillary curved, slips below preorbital, terminal end exposed, with supplemental bone. Mouth cleft small, horizontal or oblique; when closed, mandible



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straight or concave, sometimes  
ascends vertically or at angle  
nearly  $35^{\circ}$  to  $45^{\circ}$ . Teeth in jaws  
minute, uniserial, setiform or  
pluriserial, or above series of  
sharp ones and curved canine on  
each side of symphysis, below  
series of curved pointed ones with  
pair of symphyseal canines with  
notch between receiving upper  
canines. <sup>Palate edentulous.</sup> no subocular shelf,  
suborbitals not or but feebly  
ossified. Preopercle entire or  
lower edge more or less serrate.  
Gill membranes free, joined ~~or~~  
~~not~~ with isthmus. Branchiostegals  
~~5, or 6~~. Pseudobranchiae present  
or absent. Lower pharyngeals  
free, united by suture or coossified.  
Air bladder anteriorly bifurcate.  
Pyloric coeca few. Scales smooth.



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cycloid, large or small or absent  
or present on head or often on  
breast, where sometimes reduced  
to thin diaphanous plates causing  
breast to appear naked. Lateral  
line high, complete or sensory  
tubes obsolete posteriorly, or  
may cease below end of dorsal.  
Dorsal continuous, with 8 ~~to 14~~  
spines and 14 to 17 rays, with  
conspicuous basal sheath. Anal  
with 3 ~~to 5~~ spines continuous  
with ~~to 13~~ 13 to 15 rays.  
Caudal emarginate or deeply  
forked. Pectoral more or  
less falcate. Ventral thoracic  
or subthoracic, with spine and  
5 rays, large scale like point  
in axil.



A rather large family of  
carnivorous fishes, small in  
size and numerous in indi-  
viduals, often living in schools.  
They inhabit the tropical shores  
in the Indo Pacific, from the  
Red Sea and eastern Africa to  
China, Japan and the South  
Seas. Following Jordan 1923  
their resemblance to the  
Gerriidae "seems to be superficial,  
not indicating any special  
affinity."



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The following are unidentifiable postlarval stages:

213 examples. Port San Vicente.  
November 18, 1908. Largest not  
over 20 mm. Evidently several  
genera represented, as Gazza,  
Leiognathus, etc.

65 examples. Luzon shore,  
San Vicente Harbor. November 13,  
1908. Largest not over 20 mm.



dusky band from opercle till below soft dorsal; black saddle on caudal peduncle

above, often preceded by pinkish blotch. signatus.

b.<sup>6</sup> Black spot on caudal peduncle near caudal base; golden lines obliquely on head.

d.<sup>1</sup> no black band from snout to eye and below soft dorsal.

barberinus.

d.<sup>2</sup> Black band from snout to eye, and below soft dorsal.

indicus.

b.<sup>7</sup> Body with black cross bands.

e.<sup>1</sup> Three broad black cross bands, first below front of spinous dorsal, second below soft dorsal, third on hind half of caudal peduncle.

e.<sup>2</sup> Ground color pinkish; no dark longitudinal bands.

bifasciatus.

e.<sup>2</sup> Four blackish cross bands; coloration.

largely swarthy, each row of scales with narrow longitudinal dark band. orientalis.

e.<sup>3</sup> Four or 5 blackish cross bands; broad yellow area between black band below soft dorsal and black saddle on caudal peduncle.

only 3 rows only



# Analysis of Genera

a. Leiognathinae. Teeth in jaws minute, uniserial.

b. Mouth small, horizontal or directed down, when fully extended a more or less downward directed tube; closed mandible ascends angle  $30^{\circ}$  to  $45^{\circ}$ ; dorsal and ventral profiles alike, subequal or usually dorsal more convex.

c. Body deep, depth  $1\frac{3}{4}$  to  $2\frac{2}{5}$ . ~~Leiognathus~~ Leiognathus.

c.<sup>2</sup> Body longer, depth ~~more~~  $2\frac{3}{5}$  to 4. sometimes 3 or more. Macilentichthys.

b.<sup>2</sup> Mouth very small, oblique, when fully extended forms horizontal or upward directed tube; closed mandible nearly vertical. Secutor.

a.<sup>2</sup> Gazzinae. Teeth larger, same as long canines, uniserial. Gazza.



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Genus Leiognathus Lacépède

Leiognathus Lacépède, Hist. Nat. Poiss., vol. 4, p. 448, 1803. (Type Leiognathus argenteus Lacépède = Scomber equula Forskål, monotypic.)

[Equula Cuvier, Mem. Mus. Hist. Nat., Paris, vol. 1, pp. 463, 466, 1815 (March 1816). (Type Scomber equula Forskål, tantotypic.)

[Leiognathus legassiz, Nomencl. Zool., Poiss., pp. 203, 212, 1846. (Type Leiognathus argenteus Lacépède.)



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Upeneus luzonius Jordan and Seale

Upeneus luzonius Jordan and Seale,  
Bull. Bur. Fisher., vol. 26, 1906 (1907),  
p. 25, fig. 9. Cavite.

Upeneoides luzonius Jordan and Richardson,  
Bull. Bur. Fisher., vol. 27, 1907 (1908),

p. 260 (Manila). <sup>1</sup>/<sub>2</sub> Herre and Montalban,  
Philippine Journ. Sci., vol. 36, no. 1, May  
1928, p. 97, pl. 1, fig. 1 (Orani, Manila,  
Pasay, San Miguel, Capiiz, San Pedro  
Bay, Tacloban, Cuyo; Sandakan, Borneo).

Upeneoides bensasi (not Schlegel) Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1927,

p. 285 (Orani; Orion).

Upeneoides sundaius (not Bleeker) Evermann  
and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 288 (Bacon specimen). ~~not a new species, op. cit., vol. 36, no. 1, p. 97~~

Depth  $3\frac{1}{2}$  to 4; head  $5\frac{1}{5}$  to  $3\frac{1}{4}$ , width  
 $1\frac{4}{5}$  to 2. Snout  $2\frac{1}{10}$  to  $2\frac{1}{3}$  in head; eye  
 $4\frac{1}{5}$  to  $4\frac{1}{2}$ ,  $1\frac{4}{5}$  to  $1\frac{7}{8}$  in snout, 1 to  $1\frac{1}{5}$   
in interorbital; maxillary reaches eye  
in young,  $\frac{7}{8}$  to eye in adult; expansion



Equulites Fowler, Journ. Acad.  
Nat. Sci. Philadelphia, ser. 2,  
vol. 12, p. 513, 1904. (Type  
Leiognathus vermiculatus Fowler  
= Equula lineolata Valenciennes,  
orthotypic.)

Eubleekeria Fowler, Journ. Acad.  
Nat. Sci. Philadelphia, ser. 2,  
vol. 12, p. 516, 1904. (Type  
Equula splendens Cuvier,  
orthotypic.)

Aurigequula Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, vol. 70,  
p. 17, 1918. (Type Clupea fasciata  
Lacépède, orthotypic.)



second  $1\frac{7}{8}$  in head, soft dorsal height  $2\frac{1}{6}$ ; a. 7, high as soft dorsal; caudal  $1\frac{1}{8}$ , deeply notched, lobes acutely pointed; pectoral  $1\frac{2}{3}$ ; ventral  $1\frac{2}{3}$ .

Dusky above, light below. Dorsal fins edged dusky. Caudal with 6 oblique dusky bars, on lower lobe more prominent. Belly probably silvery in life. Length 175 mm.

(Snyder.)

China, Japan. Reported from Manila by Elera.



Muchequula Whitley, Mem.  
Queensland Mus., Vol. 10, pt. 2,  
p. 109, March 30, 1932. (Type  
Equula blochii Cuvier,  
orthotypic.)



Depth  $4\frac{1}{4}$ ; head  $3\frac{5}{8}$ . Snout  $2\frac{1}{2}$  in head; eye 6, midway in head; barbels reach opposite hind preopercle edge; jaws equal; maxillary reaches opposite front edge of pupil, hind edge broad, rounded, not sheathed by preorbital; teeth villiform, in bands in jaws, on vomer and palatines; interorbital  $3\frac{1}{4}$ , convex; preopercle entire; opercle with broad flat spine. Gill rakers  $6+12$ , short, flat, stout, 5 upper broad knobs.

Scales 30 in lateral line, 2 above, 6 below. Head, including snout, maxillary, throat and chin completely scaled; body scales weakly ctenoid, soft dorsal, anal and caudal with fine scales. Pores of lateral line with 5 or 6 branches.

D. VIII - 9, first spine minute, imbedded,



Body compressed, ~~oblong~~-oval or elevated, usually dorsal profile more convex. Head rather small, pointed or truncate, upper profile straight or curved with more or less concavity over interorbital bordered on each side by supraorbital bony ridge, both continued as outer border of nuchal spine ending some distance from dorsal fin. Ridges begin at inner one of pair of more or less pronounced postnasal spines; outer of which near rim of orbit, which superiorly may be crenulated. Eye moderate. Mouth small, horizontal or oblique, when protracted forms tube directed horizontally or more or less downwards. Mandible straight



or concave, when closed ascends at angle from  $35^{\circ}$   $45^{\circ}$ . Minute setiform teeth uniserial. Lower edge of preopercle serrate. Gill membranes joined to isthmus. Gill rakers 11 to 22. Pseudobranchiae present. Scales small, cycloid, more or less conspicuous, sometimes deciduous. Scales absent from head. Triangular space on breast, bordered by line from pectoral to ventral base, naked or scaly covering changes abruptly at line and may be replaced by thin diaphanous, scaly plates giving breast naked appearance. Lateral line more or less arched, complete or small sensory tubes obsolete below end of dorsal. Dorsal single, with 8 spines



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and 15 or 16 rays. Anal with 3 spines and 14 rays. Second dorsal and anal spine longest, sometimes prolonged as filament. Soft dorsal and anal with basal scaly sheath, with inter-radial spines. Caudal deeply emarginate, acute lobes spreading. Pectoral short. Ventral short, with spine and 5 rays and long axillary scale.

Small carnivorous fishes, usually bright silvery white, living in shoals along shores, river mouths, tidal estuaries and some in fresh water lakes. Important in many countries as market fishes, though not greatly valued as food.



Elagatis indicus (Valenciennes)

Trey indicus Valen



## Analysis of Species

a. Upper profile of head curved from truncate snout to concave interorbital, followed by steep convex nape; dorsal profile more convex than ventral; mouth cleft begins below eye edge.

b. Scales on breast very thin, diaphanous, giving breast naked appearance; head 3; mandible strongly concave; spinous dorsal without black blotch.

c. Second dorsal spine nearly equals body depth or more; second anal spine similar, shorter. fasciatus.

c.<sup>2</sup> Second dorsal spine more than twice body height. equula.

b.<sup>2</sup> Breast conspicuously covered with normal scales; mandible slightly concave.

d. Head 3; eye  $2\frac{1}{2}$  in head, larger than obtuse snout; maxillary reaches  $\frac{1}{2}$  in eye; snout densely dotted



black; spinous dorsal margined  
with black. splendens.

d.<sup>2</sup> Head  $3\frac{2}{3}$  to  $3\frac{2}{3}$ ; eye 3, shorter  
or equals snout; maxillary reaches  
eye; snout and spinous dorsal  
without black. dussumieri.

a.<sup>2</sup> Upper profile of head nearly or  
quite straight, with or without  
slight interorbital or frontal  
concavity and continued without  
strong or abrupt nuchal elevation  
in dorsal profile, convexity of  
which equals or more or less than  
ventral profile; snout not truncate;  
mouth cleft begins opposite lower  
third of eye.

e.<sup>1</sup> Black blotch or saddle across  
predorsal.

f.<sup>1</sup> Breast covered with normal scales. blochii.

f.<sup>2</sup> Breast naked.

g.<sup>1</sup> Eye  $2\frac{3}{4}$  in head. brevirostris.

g.<sup>2</sup> Eye 3 to  $3\frac{1}{2}$  in head. argentatus.

e.<sup>2</sup> No black predorsal saddle.

h.<sup>1</sup> Second dorsal spine greater



than body depth.

i.<sup>1</sup> Lateral line complete.

smithursti.

i.<sup>2</sup> Lateral line reaches below hind part of dorsal. blunzingeri.

h.<sup>2</sup> Second dorsal spine  $\frac{1}{2}$  body depth or less.

f.<sup>1</sup> Breast naked, 10 to 12 dark transverse <sup>bands</sup>.

h.<sup>1</sup> Second dorsal spine  $\frac{1}{4}$  to  $1\frac{3}{4}$  in head.

clausa.

h.<sup>2</sup> Second dorsal spine 2 to 2.5 in head.

lineolatus.

f.<sup>2</sup> Breast scaly.

bindus.



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Leiognathus fasciatus (Lacépède)

Clupea fasciata Lacépède, Hist.  
Nat. Poiss., vol. 5, pp. 425, 460,  
1803 (type locality, Mauritius).



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Ambonia, Goram); Atlas Ichth. Ind.  
Néerland., vol. 9, 1877, pl. (3) 393, fig. 2.

Parupeneus chryserydros Weber, Siboga  
Exped., Fische, vol. 37, 1913, p. 296  
(Karbaralong; Banda).

Pseudupeneus chryserydros Jenkins,  
Bull. U. S. Fish Comm., vol. 22, 1902 (1903),  
p. 454 (Honolulu). ~~+~~ Snyder, Bull. U. S.  
Fish Comm., vol. 22, 1902 (1904), p. 527  
(Honolulu). ~~1~~ Jordan and Evermann,  
Bull. Bur. Fisher., vol. 23, pt. 1, 1903 (1905),  
p. 255, fig. 106 (Honolulu, Hilo). ~~1~~ Seale,  
Occas. Papers Bishop Mus., vol. 4, no. 1, 1906,  
p. 51 (Fate'). ~~1~~ Jordan and Seale, Bull.  
Bur. Fisher., vol. 25, 1905 (1906), p. 275  
(Apia).

? Upeneus immaculatus E. J. Bennett,  
Proc. Zool. Soc. London, 1831, p. 60. Mauritius



Egnuma fasciata Valenciennes, Hist. nat.  
 Poiss., vol. 10, p. 97, 1835 (Mauritius).  
 — Günther, Cat. Fishes Brit. Mus.,  
 vol. 2, p. 498, 1860 (Red Sea; Malay  
 Peninsula; Philippines). — Day, Fishes  
 of Malabar, p. 106, 1865. — Kner, Reise  
 Novara, Fische, p. 167, 1865 (Java). —  
Schmeltz, Cat. Mus. Godeffroy, no. 3, p. 9,  
 1866 (Samoa); no. 4, p. 18, 1869 (Samoa;  
 Fiji). — Klunzinger, Verh. zool. bot.  
 Gesell. Wien, vol. 21, p. 467, 1871 (Red  
 Sea?). — Schmeltz, Cat. Mus. Godeffroy,  
 no. 5, p. 27, 1874 (Samoa; Viti; Fiji). —  
Günther, Journ. Mus. Godeffroy, vol.  
 5, pt. 11, p. 144, 1876 (Samoa). — Day,  
 Fishes of India, pt. 2, p. 243, pl. 51C,  
 fig. 2, 1876. — Peters, Monatsb. Akad.  
 Wiss. Berlin, p. 836, 1876 (1877) (New  
 Britain). — Schmeltz, Cat. Mus.  
 Godeffroy, no. 7, p. 46, 1879 (South Seas).



— Günther, Rep. Voy. Challenger, vol. 1,  
 p. 35, 1880 (Avalau, Fiji), p. 52  
 (Philippines). — Klunzinger, Fische  
 Roth. Meer., vol. 1, p. 107, 1884. —  
Meyer, Anal. Soc. Españ. Hist.  
 Nat. Madrid, vol. 14, p. 20, 1885  
 (Manila Bay; Kordo, Mysore). —  
Gogorza, Anal. Soc. Españ. Hist.  
 Nat. Madrid, vol. 17, p. 291, 1888  
 (Manila Bay); — Kent, Great  
 Barrier Reef, p. 369, 1893 (Queensland).

— Pöhl, Cat. Mus. Godeffroy, no. 9, p.  
 32, 1884 (Samoa).



p. 56 (South Pacific).  $\frac{1}{m}$  Bleeker,  
Verhandel. Kon. Akad. Wetensch.  
Amsterdam, vol. 15, no. 3, 1875, p. 15 (Cocos,  
Celebes, Timor, Ternate, Buru, Batjan,  
Amboina, Ceram, Banda).  $\frac{1}{m}$  Peters,  
Monatsb. Akad. Wiss. Berlin, 1876, p. 438  
(Mauritius).  $\frac{1}{m}$  Day, Fishes of India,  
pt. 2, 1876, p. 122, pl. 30, fig. 6 (type of  
Upeneus zeylonicus; Andamans).  $\frac{1}{m}$   
Martens, Preuss. Exped. Ost Asien,  
1876, p. 387 (Singapore).  $\frac{1}{m}$  Bleeker,  
Atlas Ichth. Ind. Néerland., vol. 9,  
1877, pl. (4) 394, fig. 3.  $\frac{1}{m}$  Streets,  
Bull. U. S. Nat. Mus., no. 7, 1877, p. 89  
(Fanning Islands).  $\frac{1}{m}$  Günther, Philos.  
Trans. Roy. Soc., vol. 168, 1879, p. 471  
(Rodriguez).  $\frac{1}{m}$  Sauvage, Bull. Soc.  
Philomath. Paris, series 7, vol. 5, 1881,  
p. 105 (Swatow, China).  $\frac{1}{m}$  Boulenger,  
Proc. Zool. Soc. London, 1887, p. 658



— Steindachner, Sitzs. Ber. Akad.  
Wiss. Wien, vol. 115, pt. 1, p. 1383,  
1906 (repolu).

— Weber, Siboga Exped., vol. 57, Fische,  
p. 270, 1913 (West Ceram; Saleyer).



~~Pseudopeneus chryserydros (Lacépède)~~

Mullus chryserydros Lacépède, Hist. nat. Poiss., vol. 3, 1802, pp. 384, 406, 408.

Imanitus.

(not Lacépède)

Peneus chryserydros Cuvier, Hist. nat. Poiss., vol. 3, 1829, p. 470. ~~Imanitus~~, (part;

Hawaii, Bourbon, Coromandel). <sup>1</sup><sub>m</sub>

Guichenot, Notes Ile Réunion, vol. 2, 1862,

p. 24. <sup>1</sup><sub>m</sub> Macleay, Proc. Linn. Soc. New South Wales, vol. 7, 1882, p. 246 (New

Guinea). <sup>1</sup><sub>m</sub> Sherrin, Hist. nat. Madagascar,

Poiss., 1891, p. 228, pl. 26, figs. 3-3a (type).

<sup>1</sup><sub>m</sub> Snyder, Proc. U. S. Nat. Mus., vol. 42,

1912, p. 502 (Okinawa). <sup>1</sup><sub>m</sub> Fowler, Copeia,

no. 112, November 20, 1922, p. 83 (Hawaii);

Bull. Bishop Mus., no. 22, 1925, p. 10

(Guam), p. 26 (Honolulu). <sup>1</sup><sub>m</sub> Fowler

and Ball, Bull. Bishop Mus., no. 26,

1925, p. 15 (Johnston and Wake Islands).

<sup>1</sup><sub>m</sub> Herre and Montalban, Philippine



Leiognathus fasciatus Bleeker,  
Ned. Tijds. Dierk., vol. 1, p. 240,  
1863 (Obi), p. 270 (Sitapupu, Timor);  
Verslag. Kon. Akad. Wet. Amsterdam,  
ser. 2, vol. 2, p. 293, 1868 (Rio,  
Bintang); ser. 2, vol. 7, p. 36, 1873  
(Amu). — Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, p. 273,  
1905 (1906) (Apia; Pago Pago); vol.  
26, p. 14, 1906 (1907) ( ).  
— Evermann and Seale, Bull. Bur.  
Fisher., vol. 26, p. 69, 1906 (1907)  
(San Fabian). — Kendall and  
Goldborough, Mem. Mus. Comp. Zool.,  
vol. 26, p. 274, 1911 (Suva).



Sciaena ciliata Lacépède, Hist. nat.  
Poiss., vol. 4, 1803, pp. 308, 312. No  
locality.

Mullus radiatus Shaw, General  
Zoology, vol. 4, pt. 2, 1803, p. 18. Indian  
Seas.



— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 70, 1918, p. 17 (Philippines); Copeia, no. 58, p. 63, June 18, 1918 (Philippines); Bull. Bishop Mus., ~~vol. 10, p.~~ no. 22, p. 33, 1925 (Samoa); Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 273 (Orani; Orion; Philippines); Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, p. 112, September 30, 1928 (Bombay); Mem. Bishop Mus., vol. 10, p. 153, 1928 (Ebou Island; Apia; Suva). — McCulloch, Austral. Mus. Mem., vol. 5, pt. , p. 213, 1929.

— Herre, Journ. Pan Pac. Res. Inst., vol. 6, no. 4, p. 12, October-December 1931 (New Hebrides).



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Pseudupeneus cyclostomus Jordan and  
Seale, Bull. Bur. Fisher., vol. 25,  
1905 (1906), p. 275 (Pago Pago).  
Sesama



— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 320, 1931 (Mias; Salayer; Ceram; Ceylon). — Fowler, Mem. Bishop Mus., vol. 11, no. 5, p. 327, 1931 (reference); vol. 11, no. 6, p. 406, 1934 (New Hebrides; Samoa); Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 144, 1935 (Bangkok; Paknam).

Leiognathus (Aurigequula) fasciatus  
Whitley, Journ. Pan Pac. Res. Inst.,  
 vol. 2, no. 1, p. 5, 1927 (Fiji).



Upeneus cyclostoma Rüppell, Neue  
Wirbelth. Fische, 1835, p. 101 (Mohila).  
+ Günther, Cat. Fishes Brit. Mus.,  
vol. 1, 1859, p. 409 (Moluccas, Ceram,  
- Schmeltz, Cat. Mus. Godeffroy, no. 3, 1866, p. 7 (Samoa).  
Amboina)  $\wedge$  Klunzinger, Verhandl.  
zool. botan. Gesell. Wien, vol. 20, 1870,  
p. 745 (Rose, Red Sea)  $\wedge$  Pöhl, Cat. Mus. Godeffroy, no. 9, 1884, p. 17 (Samoa).  
Meyer, An. Soc. Españ. Hist. Nat. Madrid,  
vol. 14, 1885, p. 16 (North Celebes).

Parupeneus cyclostomus Steindachner,  
Denkschr. Akad. Wiss. Wien, math.-  
naturwiss. Classe, vol. 70, 1901, p. 486  
(Honolulu).  $\wedge$  Pellegrin, Bull. Soc.  
Zool. France, vol. 39, 1914, p. 231 (Rossi  
Bé, Madagascar).  $\wedge$  Barnard, Ann.  
South African Mus., vol. 21, pt. 2, 1927,  
p. 586 (Natal coast).

Parupeneus cyclostoma Zugmayer, Abhandl.  
Kon. Bayer. Akad. Wiss., math.-physik.  
Klasse, vol. 26, Band 6, 1913, p. 11 (Oman).



Equula filigera Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 92, pl. 284, 1835  
(type locality, Moluccas; Malabar;  
Seychelles). — Swainson, Nat.  
Hist. Animals, vol. 2, p. 250, 1839  
(reference). — Bleeker, Nat.  
Geneesk. Arch. Ned. Ind., vol. 2,  
p. 518, 1845 (Batavia). — Cantor,  
Journ. Asiatic Soc. Bengal, vol.  
18, pt. 2, p. 1132, 1849 (1850).  
(Pinang; Malay Peninsula; Singapore).  
— Bleeker, Nat. Tijds. Ned. Indie,  
vol. 2, p. 471, 1851 (Rio); — Jerdon,  
Madras Journ. Lit. Sci., p. 138,  
1851. — Bleeker, Nat. Tijds.  
Ned. Indie, vol. 3, p.



Mullus aureovittatus Shaw, General Zool., vol. 4, pt. 2, 1803, p. 68. Indian Seas.

Upeneus zeylonicus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 459. Trinquemale, Ceylon. <sup>i</sup>/<sub>m</sub> Valenciennes, Hist. Nat. Poiss., vol. 7, 1831, p. 520 (New Guinea).

Mulloidae zeylonicus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 404 (compiled). <sup>i</sup>/<sub>m</sub> Bleeker, Verhandl. Kon.

Akad. Wetensch. Amsterdam, vol. 15, no. 3, 1875, p. 16 (compiled); Arch. Neerland. Sci. Nat. Harlem, vol. 13, 1878, p. 46 (New Guinea). <sup>i</sup>/<sub>m</sub> Károli,

Termesz. Füzetek, Budapest, vol. 5, 1881, p. 156 (Ceylon). <sup>i</sup>/<sub>m</sub> Boulenger, Proc. Zool. Soc. London, 1887, p. 658 (Muscat). <sup>i</sup>/<sub>m</sub>

Zugmayer, Abhandl. Kon. Bayer. Akad. Wiss., math.-physik. Klasse, vol. 26, band 6, 1913, p. 11 (Qman).



(161) 165, 1852 (Timor Kupang; Padang;  
Batavia; Samarang), p. 409 (Sampit),  
p. 717 (Karang hadji, Banka;  
Goessongassam at Koba, Banka),  
p. 718 (Tandjong Berikat at Koba,  
Banka); Verh. Batavia. Genoot.  
(makreel.), vol. 24, p. 79, 1852  
(Batavia; Samarang; Padang);  
(hal. Ichth. Bengal), vol. 25, p. 46,  
1853 (reference); Nat. Tijds. Ned.  
Indie, vol. 6, p. 51, 1854 (Mindangole,  
Halmaheira), p. 204 (Timor Kupang),  
p. 375 (denger); vol. 7, p. 312, 1854



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Pseudupeneus cyclostomus (Lacépède)

Mullus cyclostomus Lacépède, Hist. nat. Poiss., vol. 3, 1802, pp. 383, 404, pl. 14, fig. 3.

No locality.

Upeneus cyclostomus Cuvier, Hist. nat.

Poiss., vol. 3, 1829, p. 472 (type; Seychelles).

(no. 3, 1866, p. 7 (Samoa);

$\frac{1}{m}$  Schmeltz, Cat. Mus. Godeffroy, no. 4, 1869,

p. 14 (Samoa);  $\frac{1}{m}$  Pöhl, Cat. Mus. Godeffroy, no. 9, 1884, p. 27

Soc. London, 1887, p. 658 (Muscat).  $\frac{1}{m}$

Sauvage, Hist. nat. Madagascar, Poiss., 1891, p. 226, pl. 26, figs. 4-4a (type,

said to be from Mauritius).  $\frac{1}{m}$  Snyder,

gill filaments not  
reticulated.  
Lateral line single.  
Xanthomorphous.  
Lateral line double.  
Grammatocyanus.  
Lateral line single; teeth in  
four with edges rounded;  
no prominent teeth.



(Bantem; Anjer; Tjiringin); vol. 9, p. 492, 1855 (Batjan); vol. 10, p. 347, 1856 (Rio, Bintang); vol. 11, p. 419, 1856 (Muntok, Banka); vol. 12, p. 215, 1856 (Lias), p. 293 (Boleling, Bali); vol. 13, p. 388, 1857 (Timor Koepang); Act. Soc. Sci. Ind. Neerl., vol. 2, no. 7, p. 5, 1857 (Amboina); vol. 3, no. 4, p. 3, 1857-58 (Tanawanko); vol. 15, p. 200, 1858 (Goram); Act. Soc. Sci. Ind. Neerl. (Sumatra), p. 12, 1859 (Benculen); Nat. Tijds. Ned. Indie, vol. 21, p. 138, 1860 (Muntok, Banka); vol. 22, p. 249, 1860 (Timor); Ned. Tijds. Dierk., vol. 1, p. 152, 1863 (Batjan).



entirely above lateral line. Body otherwise pale brown, lighter below. Eye brown. Fins brown.

Arabia, Zanzibar, Delagoa Bay, Natal, Madagascar, Seychelles, India, Philippines, China, Riu Kiu, Japan, <sup>Polynesia,</sup> Hawaii. Known chiefly by its coloration, the light and dark postocular bands and the short barbels, which reach only opposite hind preopercle edge. In addition to the dark postocular band there is also one below the eye, indistinctly defined, though parallel with the upper one, which extends till above pectoral. All my specimens have the caudal peduncle blotch above the lateral line.



Equula longispinis Valenciennes,  
Hist. Nat. Poiss., vol. 10, p. 94,  
September 1835 (type locality,  
Waigiu).

Curigequula longispinis Whitley,  
Mem. Queensland Mus., vol. 10, pt. 2,  
p. 101, pl. 13, figs. 1-2, March 30,  
1932 (types of Equula asina and  
E. smithursti; Malekula, New Hebrides,  
Samoa).

Equula sarah Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. . . , September  
1935 (type locality,



Upeneus indicus (not Shaw) Gilchrist  
and Thompson, Ann. South African  
Mus., vol. 6, 1908, p. 164.

Upeneus spilurus (not Bleeker) Norman,  
Ann. Mag. Nat. Hist. London, series 7, vol.  
9, 1922, p. 321.

Depth  $3\frac{1}{8}$  to  $3\frac{1}{5}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{5}$ ,  
width  $1\frac{1}{10}$  to 2. Snout 2 to  $2\frac{1}{4}$  in head;  
eye 5 to  $5\frac{1}{5}$ ,  $2\frac{3}{5}$  to  $2\frac{2}{3}$  in snout,  $1\frac{2}{5}$   
to  $1\frac{2}{3}$  in interorbital; maxillary reaches  
 $\frac{3}{4}$  to  $\frac{7}{8}$  to eye, expansion 1 to  $1\frac{1}{4}$  in eye,  
length  $2\frac{3}{4}$  to  $2\frac{7}{8}$  in head; barbels  
reach opposite hind eye edge, length  
 $1\frac{1}{2}$  to  $2\frac{1}{4}$  in head; teeth conic,  
uniserial, none on palate; interorbital  
 $3\frac{1}{4}$  to  $3\frac{1}{3}$ , convex. Gill rakers 7+24,  
lanceolate,  $1\frac{4}{5}$  in gill filaments which  
equal eye.

Scales 26 or 27 in lateral line to  
caudal base and 3 or 4 more on latter;



Equula setigera Agassiz, Pois.  
Foss., vol. 5, p. 24, pl. 13, 1845.

Equula asina De Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, no. 3,  
 p. 544, November 29, 1884 (type  
 locality, Cape York, Queensland).  
 — Saville-Kent, Prelim. Rep.  
Food Fish Queensland, p. 10, 1889,  
Great Barrier Reef, p. 369, 1893  
 (Queensland).

Leiognathus asinus McCulloch and  
Whitley, Mem. Queensland Mus.,  
 vol. 8, p. 145, 1925 (reference). —  
McCulloch, Austral. Mus. Mem.,  
 no. 5, pt. 2, p. 213, <sup>Vol. 10,</sup> 1929 (reference).



Mullus pleurotaenia Playfair, Fishes  
of Zanzibar, 1866, p. 41, pl. 5, fig. 3  
(not fig. 4). Zanzibar.

Upeneus pleurotaenia Boulenger,  
Proc. Zool. Soc. London, 1889, p. 239 (Muscat).  
L Snyder, Proc. U. S. Nat. Mus., vol. 42,  
m 1913, p. 591 (Okinawa). L Jordan and  
Hubbs, Mem. Carnegie Mus., vol. 10,  
m No. 2, 1925, p. 246 (Kagoshima Bay; Hong  
Kong).

Parupeneus notospilus Klunzinger, Fische  
Roth. Meer., 1884, p. 51, pl. 5, fig. 3.  
Roseir Harbor, Red Sea. L Pellegrin,  
m Bull. Soc. Zool. France, vol. 39, 1914, p. 229  
(Fort Dauphin, Madagascar).

→ Upeneus natalensis Gilchrist and Thompson,  
Ann. South African Mus., vol. 6, 1908, 10,  
(1909),  
p. 229. Natal; Ann. Durban Mus., vol.  
1, pt. 4, 1917, p. 364 (reference).



Depth  $1\frac{7}{8}$  to 2; head 3 to  $3\frac{1}{5}$ , width  $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout  $2\frac{3}{4}$  to  $3\frac{1}{5}$  in head; eye 3 to 4, greater than snout ~~to~~ in young to  $1\frac{1}{4}$  in snout with age, subequal with interorbital in young to  $1\frac{1}{4}$  in interorbital with age; maxillary reaches eye, expansion  $2\frac{3}{4}$  to  $3\frac{1}{2}$  in eye, length  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in head; interorbital 3 to  $3\frac{1}{4}$ , rather low, depressed medially. Gill rakers 6 + 15, lanceolate,  $1\frac{1}{2}$  in gill filaments, which 2 in eye.

Scales very small, present on chest and breast. Lateral line complete, less arched than back, midway along side of



caudal peduncle to caudal base.

D. VIII, 16, second spine  $1\frac{7}{8}$  to  $2\frac{2}{3}$  in fish without caudal, first branched ray 5 to  $5\frac{1}{5}$  in head; A. III, 14, second spine  $1\frac{1}{4}$  to 2, first branched ray  $4\frac{2}{5}$  to  $5\frac{3}{4}$ ; caudal 1 to  $1\frac{1}{10}$ , deeply forked, lobes pointed; least depth of caudal peduncle  $4\frac{3}{4}$  to 5; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , rays II, 18; ventral I, 5, fin  $2\frac{1}{5}$  to  $2\frac{1}{4}$ , axillary scale  $1\frac{1}{4}$  in fin.

Back, till level with eye above, drab, gray or very pale yellowish-brown, below bright silvery white. When fresh 12 to 15 narrow, dark gray bands or lines on back.



Pectoral axil dark gray, Fins clear. Iris silvery white.

Red Sea, Arabia, Zanzibar, Chinde, Delagoa Bay, Natal, Madagascar, Bourbon, Mauritius, India, Ceylon, Malaya, East Indies, Siam, Philippines, Formosa, Rin Kiu, North Australia, Queensland, Melanesia, Polynesia. Lives in marine and ~~blu~~ brackish water. Known by the long filamentous second dorsal spine, the dark transverse gray lines on the back usually faded in preserved specimens. Said to reach 220 mm.



Six examples. Abuyog, Leyte.  
July 26, 1909. Length 78 to 92 mm.

17744. Alimango Bay, Burias  
Island. March 5, 1909. Length 183 mm.

One example. Aparri, Luzon.  
November 19, 1908. Length 95 mm.  
12080. Cavite Market. December 1, 1908. Length 178 mm.

21951 to 21954. Cuyo Island.  
April 9, 1909. Length 98 to 113 mm.

One example. Lingayen Gulf,  
west coast of Luzon. May 11, 1909.  
Length 79 mm.

20309. Manila market, Luzon.  
June 17, 1908. Length 162 mm.  
6222. Mantaguin Bay, Palawan. April 2, 1909. Length 110 mm.

9638. Iato River, Luzon. June  
18, 1909. Length 175 mm.

5347, 5348. Lomuan River, Camp  
Overton, Mindanao. August 6, 1909.  
Length 89 to 97 mm.

5006, 11806. Panabutan Bay,  
Mindanao. February 5, 1908. Length  
188 to 192 mm.



1107

<sup>Canal 30</sup> Pseudupeneus pleurospilos (Bleeker)  
Upeneus pleurospilos Bleeker, Natuurk.  
Tijdschr. Nederland. Indië, vol. 4, 1853,  
p. 110. Amboina; Verhandel. Batavia.  
Genootsch. (Japan), vol. 26, 1854, p. 69  
(Japan).  $\frac{1}{m}$  Günther, Cat. Fishes Brit. Mus.,  
vol. 1, 1859, p. 407 (compiled).  $\frac{1}{m}$  Klunzinger,  
Verhandel. zool. botan. Gesellsch. Wien,  
vol. 20, 1870, p. 746 (Koseir, Red Sea).  $\frac{1}{m}$   
Meyer, An. Soc. Españ. Hist. Nat. Madrid,  
vol. 14, 1885, p. 16 (Manado, Celebes; Cebu).  
 $\frac{1}{m}$  Elera, Cat. Fauna Filipinas, vol. 1, 1895,  
p. 480 (Luzon, Cavite, Santa Cruz, Cebu).  $\frac{1}{m}$   
Snyder, Proc. U.S. Nat. Mus., vol. 42, 1912,  
p. 502 (Okinawa).  $\frac{1}{m}$  Herre and Montalban,  
Philippine Journ. Sci., vol. 36, no. 1, May  
1928, p. 128, pl. 1, fig. 2 (Polillo, Calapan,  
Cebu, Cagayan de Misamis, Davao).  $\frac{1}{m}$   
J. Schmidt, Trans. Pac. Comm. Acad. Sci. USSR.,  
vol. 1, 1930, p. 59 (Daikuma, Riu Kiu).



19697, 19698, Port Janelo, Luzon.

July 13, 1908. Length 62 to 98 mm.  
27 examples.

One example. Pucot River, Marikina.  
January 29, 1909. Length 103 mm.

Five examples. River at Pasacao, Luzon.  
March 9, 1909. Length 85 to 93 mm.

Four examples. River at Fort Dupon,  
Leyte, brackish water. March 17, 1909.  
Length 86 to 99 mm.

One example. San Miguel Harbor,  
Ticao Island. April 21, 1908. Length  
98 mm. Poor.

8788, 8789, 21681. Santiago River,  
Pagas Bay, Luzon. February 20, 1909.  
Length 85 to 102 mm.

21539. Subic Bay. January 7, 1908.  
Length 75 mm.

5606. Tacloban market. July 25,  
1909. Length 100 mm. Second dorsal spine  
reaches caudal base.



1100  
cinnabarinus.

n.<sup>5</sup> Bright red; golden band from eye to caudal base; fins red; barbels pale yellow.

chrysopleuron.

n.<sup>6</sup> Back purplish, tail pink; dorsals dusky, with pale lines; barbels dusky, reach hind preopercle edge.

crassilabris.

n.<sup>7</sup> Greenish brown, flanks silvery; spinous dorsal dusky; eye  $3\frac{1}{5}$ ,  $1\frac{2}{5}$  in snout.

cyprinoides.

m.<sup>2</sup> Brown band along lateral line from hind eye edge to caudal peduncle; another from above pectoral axil to middle of caudal base.

taeniatus.

l.<sup>2</sup> Coloration uniform rosy; barbels reach beyond preopercle.

janseni.

Case 13  
name only



2183-

Five examples. Tilig, Lubang  
Island. July 14, 1908. Length 78  
to 95 mm.

Eleven examples. Verde del Sur  
Island, Palawan reefs and flats.  
April 6, 1909. Length 77 to 123 mm.

17273. Verde del Sur Island.  
April 7, 1909. Length 84 mm.

One example, Sandakan Bay,  
Borneo. March 2, 1908. Length 82 mm.  
Second dorsal spine equals head.

One example. Tifu Bawu Island.  
December 10, 1909. Length 90 mm.



k.<sup>3</sup> Barbels reach opposite hind  
preopercle edge.

porphyreus.

g.<sup>2</sup> No pale or whitish blotch behind soft  
dorsal.

l.<sup>1</sup> Coloration not uniform.

m.<sup>1</sup> No brown median lateral bands.

n.<sup>1</sup> Largely crimson; scales on back  
below dorsals edged black; barbels  
and vertical fins yellow, soft dorsals  
and anals with horizontal blue bands.

chrysoneurus.

n.<sup>2</sup> Rosy; 4 white horizontal lateral bands,  
second from eye, third from below eye  
and fourth from below pectoral base.

bilineatus.

n.<sup>3</sup> Four blue horizontal lines on head;  
each body scale with pale spot.

luteus.

n.<sup>4</sup> Vermilion; each scale with silvery spot,  
form 2 rows above lateral line and 2 rows  
below; opercle purple; barbels rosy.

Can 13 name only



U.S.N.M., no. 39829. Singapore.  
Museum of Comparative Zoology.  
Length 802 mm. Two examples.  
One still shows the second anal  
spine elongate and filiform or a  
little longer than the head, about  
 $2\frac{7}{8}$  in fish without caudal.

U.S.N.M., no. 52272. Apia, Samoa.  
Bureau of Fisheries. Six examples.  
Length 48 to 168 mm.

U.S.N.M., no. 56253. San Fabian,  
Philippines. Bureau of Fisheries  
(3211). Length 158 mm.

U.S.N.M., no. 59008. San Fabian.  
Bureau of Fisheries (3958). Length  
86 mm.

U.S.N.M., no. 65895. Suva, Fiji.  
Albatross Collection (08816). Length  
99 mm.

U.S.N.M., no. 72156. Iloilo.  
R. C. McGregor. Length 97 mm. As  
Leiognathus camal.



12475 A.N.S.P. "Tahiti." Dr. J. K.  
Townsend. Length 195 mm.? As Epenus  
trifasciatus and Epenus multifasciatus.  
I cannot but think the locality for this specimen  
is Hawaii even though the original label says  
"Otahiti."

~~18856 A.N.S.P. Honolulu. Bur. Fisher.~~  
~~28007 A.N.S.P. Honolulu. Bur. Fisher.~~

28007 A.N.S.P. Honolulu. Bur. Fisher.  
(02988).

28008 A.N.S.P. Honolulu. Bur. Fisher.  
(03954).

28042 A.N.S.P. Honolulu. Bur. Fisher.  
(03178).

28043 A.N.S.P. Honolulu. Bur. Fisher.  
(03922).

28086 A.N.S.P. Honolulu. Bur. Fisher.  
(03982). As Pseudopenus porphyreus.

29618 A.N.S.P. Honolulu. Stanford  
University (2204). In exchange.

29619 A.N.S.P. Honolulu. Stanford  
University (2205). In exchange.

31703 A.N.S.P. Honolulu. Bur. Fisher.  
(03901).



U. S. N. M., one example (with 72650  
U. S. N. M.). Binolanger, Java.

O. Bryant and W. Palmer.

November 9, 1909. Length 76 mm.

Is Leiognathus splendens?



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rose.

Dark stripe begins behind snout, passes through eye and backward near dorsal axil, thus about width of eye; above yellowish stripe begins behind head; reddish brown blotch on caudal peduncle slightly larger than eye. Cheek nearly silvery, with purplish shades about margins. Breast and lower body surfaces white. Barbels pale. Iris silvery. Dorsals



Leiognathus equula (Forskål)

Scomber equula Forskål,  
 Descript. Animal., pp. 12, 58,  
 1775 (type locality, Arabia).  
 — Bonnaterre, Tabl. Ichth., p. 141,  
 1788 (Red Sea). — Gmelin, Syst. Nat.  
 Linn., pt. 1, p. 1337, 1789 (Red Sea).  
 — Walbaum, Artedi Pisc., ~~vol. 3~~,  
~~#7~~ vol. 3, p. 220, 1792 (copied). —  
Schneider, Syst. Ichth. Bloch, p.  
 36, 1801 (Red Sea). — Shaw, General  
 Zool., vol. 4, p. 587, 1804.

Centroaster equula Walbaum,  
 Artedi Pisc., vol. 3, p. 699, 1792  
 (copied).

Caesio equulus Lacépède, Hist. Nat.  
 Poiss., vol. 3, pp. 85, 90, 1802 (Arabia).



behind eye as dark blotch and  
this may continue to suprascapula.  
Often 4 or 5 dark transverse bands  
across predorsal, first usually  
extends over before eye, second  
may be from one eye to the other,  
third from close behind each eye  
and others at occiput and close  
before spinous dorsal. From base  
of spinous dorsal broad yellowish  
white transverse ~~band~~ down over  
side 4 or 5 scales in extent, then  
broad blackish brown band to soft  
dorsal origin. From base of soft  
dorsal broad blackish brown band,  
3 or 4 scales wider, down to middle  
of side, often with anterior dark  
band appearing as pair of broad  
bands. Blackish brown ~~saddle~~ on  
caudal peduncle 4 scales wide down



2189

Equula equula Klunzinger, Fische  
Roth. Meer., vol. I, p. 107, 1884.



Cope 129

Pseudupeneus fraterculus (Valenciennes)

~~Upeneus fraterculus Valenciennes, Hist.~~

~~Nat. Poiss., vol. 7, 1831, p. 524. Mahé,~~

~~Seychelles.  $\frac{1}{m}$  Sauvage, Hist. Nat. Madagascar,~~

~~Poiss., 1891, p. 225, pl. 27, fig. 3 (type).  $\frac{1}{m}$~~

~~Fowler, Proc. Acad. Nat. Sci. Philadelphia,~~

~~1925, p. 246 (Delagoa Bay); Mem. Bishop~~

~~Mus., vol. 10, 1928, p. 231 (copied Playfair).~~

~~Parupeneus fraterculus Barnard, Ann.~~

~~South African Mus., vol. 21, pt. 2, 1927, p.~~

~~588 (natal coast, Delagoa Bay, Chinde).~~

~~Mullus dispilurus Playfair, Fishes of~~

~~Zanzibar, 1866, p. 41, pl. 5, fig. 4, Zanzibar;~~

~~Island of Pemba.  $\frac{1}{m}$  Meyer, Rev. Soc.~~

~~Espan. Hist. Nat. Madrid, vol. 14, 1885, p.~~

~~16 (North Celebes).~~

~~Upeneus dispilurus slay, Fishes of~~

~~India, pt. 1, 1875, p. 125, pl. 31, fig. 3~~

~~(Sind). (Error.)~~



Leiognathus equula Jordan and  
Starks, Ann. Carnegie Mus.,  
vol. 11, nos. 3 and 4, p. 444,

November 5, 1917 (Ceylon; Cavite  
specimen). — Fowler, Copeia, no.  
58, p. 63, June 18, 1918 (Philippines);  
~~in~~ Proc. Acad. Nat. Sci.

Philadelphia, vol. 77, p. 218, 1925  
(Delagoa Bay). — Barnard, Ann.  
South African Mus., vol. 21, pt. 2,  
p. 624, <sup>Oct. 1927</sup> pl. 26, fig. 7, ( Natal; Delagoa Bay; Chinde).

— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 79, p. 273, 1927  
(San Fernando; Santa Maria; Vigan;  
Orani; Philippines); Mem.

Bishop Mus., vol. 10, p. 153, 1928  
(types of Leiognathus obscura;  
Fiji; Suva; New Guinea; Elton  
Island); vol. 11, no. 5, p. 327, 1931  
(Suva); Occas. Pap. Bishop Mus.,



cheek below eye to lower preopercle edge. Tubes of lateral line arborescent. Scales with 5 or 6 basal radiating striae; 130 to 165 apical denticles, with 10 to 14 transverse series of basal elements; circuli fine.

D. VIII — I, 8, I, third spine  $1\frac{1}{2}$  to  $1\frac{2}{3}$  in head, first branched ray  $2\frac{3}{4}$  to  $3\frac{1}{10}$ , last ray  $1\frac{2}{5}$  to  $2\frac{1}{2}$ ; A. I, 6, I, first branched ray  $2\frac{2}{5}$  to  $3\frac{1}{8}$ , last ray  $1\frac{2}{3}$  to 2; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , deeply forked, lobes rather blunt; least depth of caudal peduncle  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ .

Light brown generally, paler below. Usually a dusky or darker brown band, variable along front side of snout to eye and then



vol. 9, no. 20, p. 5, August 1932  
(Suva); Mem. Bishop Mus., vol.  
11, no. 6, p. 406, 1934 (Titeru,  
Solomons; Normanby Island);  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. 86, p. 454, 1934 (Durban, Natal);  
vol. 87, p. 144, 1935 (Paknam, Siam).



~~14~~ 4

Depth 3 to  $3\frac{1}{3}$ ; head  $2\frac{7}{8}$  to 3, width  $2\frac{1}{5}$  to  $2\frac{1}{4}$ . Snout  $1\frac{3}{4}$  to  $1\frac{7}{8}$  in head; eye  $4\frac{2}{3}$  to 6,  $2\frac{1}{3}$  to  $3\frac{3}{5}$  in snout,  $1\frac{1}{5}$  to  $1\frac{4}{5}$  in interorbital; maxillary reaches  $\frac{2}{3}$  to  $\frac{4}{5}$  to eye, expansion  $\frac{1}{8}$  to  $\frac{1}{2}$  greater than eye, length  $2\frac{2}{5}$  to  $2\frac{1}{2}$  in head; barbels reach within 2 scales of or to ventrals, length 1 to  $1\frac{1}{5}$  in head; teeth rather large, conic, strong, short, 28 above, 22 below, uniserial, none on palate; interorbital  $3\frac{1}{2}$  to  $3\frac{4}{5}$ ; convex. Gill rakers  $8 + 30$ ; lanceolate, slightly longer than gill filaments or  $1\frac{1}{5}$  in eye.

Scales 27 or 28 in lateral line to caudal base and 3 more on latter; 3 above, 6 below, 12 or 15 predorsal forward to nostril; 3 rows on



Leiognathus equulus Chandhuri,  
Mem. Indian Mus., vol. 5, p.  
730, 1923 (Chilka Lake).

— Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 6, p.  
322, 1931 (Bleeker's materials). —

Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, p. 71, fig. 6  
(young), 1934 (Den Pasar and Sanoer,  
Bali).



1202

+ Sauvage, Hist. Nat. Madagascar, Poiss.,  
<sup>m</sup> 1891, p. 224 (part). — Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, 1900, p. 520 ("Tahiti", likely erroneous locality).  
Parupeneus bifasciatus Steindachner,  
Denkschr. Akad. Wiss. Wien, math.-  
naturwiss. Classe, vol. 70, 1900, p. 486  
(Honolulu; Laysan). <sup>1</sup>/<sub>m</sub> Weber, Siboga  
Expd., Fische, vol. 57, 1913, p. 295 (part).  
Upeneus velifer Smith and Swain, Proc.  
U. S. Nat. Mus., vol. 5, 1882, p. 130.

Johnston Island.

Upeneus bifasciatus (not Lacépède)

Sauvage, Hist. Nat. Madagascar, Poiss.,  
1891, p. 221 (part).

Upeneoides vittatus (not Forsk.)

Sauvage, op. cit., 1891, pl. 27, fig. 2.

(Hist. Nat. Madagascar, Poiss.)

Upeneus multifasciatus



Scomber edentulus Bloch, Nat.  
Cur. Fische, vol. 9, p. 109,  
pl. 428, 1795 (type locality, Malabar).  
— Schneider, Syst. Ichth. Bloch,  
p. 36, 1801 (Tranquebar).



Frigates Shoals, Laysan, Lisianski).

$\frac{1}{m}$  Fowler, Bull. Bishop Mus., no. 38, 1927,  
p. 16 (Laysan); Mem. Bishop Mus., vol.  
10, 1928, p. 228 (Maui, types of Lipeneus  
velifer, Hilo, French Frigate Shoals,  
Laysan and Johnston Islands; <sup>"Tahiti" specimen</sup>); Proc.  
Acad. Nat. Sci. Philadelphia, 1929 (1930),  
p. 648 (Honolulu; <sup>"Tahiti" specimen</sup>).

Mullus trifasciatus (not Lacépède) Cuvier,  
Hist. Nat. Poiss., vol. 3, 1829, p. 468  
(Hawaii).

Lipeneus tri-fasciatus Lay and Bennett,  
Zool. Beechey's Voyage, 1839, p. 46 (Oahu).

Lipeneus trifasciatus Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 407 (part).  $\frac{1}{m}$

Günther, Journ. Mus. Godeffroy, vols. 2-3,  
pts. 5-6, 1874, p. 59 (Hawaiian Islands).

$\frac{1}{m}$  Streets, Bull. U. S. Nat. Mus., no. 7, 1877,  
p. 71 (Honolulu).  $\frac{1}{m}$  Günther, Rep. Voy.  
Challenger, vol. 1, 1880, p. 59 (Honolulu).



Egnumula edentula Günther, Cat.  
 Fish. Brit. Mus., vol. 2, p. 498, 1860  
 (Red Sea; Bengal; Madras; Calcutta;  
 Amboyna; India; type of Egnumula serrulifera).  
 — Bleeker, Verslag. Kon. Akad. Wet.  
 Amsterdam, vol. 16, p. 368, 1864 (Amu);  
 Ned. Tijds. Dierk., vol. 2, p. 31, 1865  
 (Manila Bay). — Kner, Reise Novara,  
 Fische, p. 166, 1865. — Day,  
 Fishes of Malabar, p. 103, 1865. —  
Playfair, Fishes of Zanzibar, p. 65,  
 1866 (Aden; Zanzibar). — Klunzinger,  
 Verh. zool. bot. Gesell. Wien, vol. 21,  
 p. 467, 1871 (Red Sea?). — Day, Fishes  
 of India, pt. 2, p. 238, pl. 52, fig. 1,  
 1876. — Macleay, Proc. Linn. Soc.  
 New South Wales, vol. 4, p. 63, 1879  
 (Solomons).



Günther, Introd. Study of Fishes,  
 p. 450, fig. 200, 1880 (copied).  
~~Hárolí, Termész. Füzetek, Budapest, vol. 1, p. 161, 1881 (Singapore; Metan).~~  
Macleay, Proc. Linn. Soc. New  
 South Wales, vol. 7, p. 266, 1883  
 (Normanby Island). — Meyer,  
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 Madrid, vol. 14, p. 26, 1885  
 (North Celebes; Macassar; Manila  
 Bay; Cebu; Ternate; Kordo). —  
Gorgaza, Anal. Soc. Españ. Hist.  
 Nat. Madrid, vol. 17, p. 291, 1888  
 (Manila Bay). — Day, Fauna  
 British India, Fishes, vol. 2, p.  
 186, fig. 65, 1889. — Kent, Rep.  
 Food Fish. Queensland, p. 10, pl.  
 10, fig. 33, 1889 (copied). —  
Vinciguerra, Ann. Mus. Civ.  
 Stor. Nat. Genova, ser. 2, vol. 9,  
 p. 171, 1890 (Rangoon; Metan).



(Muscat, East Arabia).  $\frac{1}{m}$  Day, Fauna  
British India, Fishes, vol. 2, 1889, p.  
28, fig. 11.  $\frac{1}{m}$  Sauvage, Hist. Nat. Madagascar,  
Poiss., 1891, p. 231 (Red Sea, Mauritius,  
Reunion, Zanzibar, Hawaii, Guam, Borneo,  
Borabora, Fiji).  $\frac{1}{m}$  Elera, Cat. Fauna  
Filipinas, vol. 1, 1895, p. 480 (Luzon;  
Manila).  $\frac{1}{m}$  Weber, Zool. Forschungsr.  
Australien <sup>Malay Arch.</sup>, vol. 5, 1895, p. (104)  
264 (New Guinea).  $\frac{1}{m}$  Rutter, Proc.  
Acad. Nat. Sci. Philadelphia, 1897,  
p. 72 (compiled).  $\frac{1}{m}$  Kendall and  
Goldsborough, Mem. Mus. Comp. Zool.,  
vol. 26, 1911, p. 294 (Makemo, Vavau,  
Funafuti, Borabora).  $\frac{1}{m}$  Snyder, Proc.  
U.S. Nat. Mus., vol. 42, 1912, p. 503  
(Okinawa).  $\frac{1}{m}$  Gilchrist and Thompson,  
Ann. Durban Mus., vol. 1, pt. 4, 1917, p.  
364 (compiled).  
Upeneoides flavolineatus Pöhl, Cat. Mus. Godeffroy,  
no. 9, 1884, p. 45 (Madagascar).



— Sauvage, Hist. Madagascar,  
Poiss., p. 518, 1891 (reference). —  
Kent, Great Barrier Reef, p. 369,  
1893. — Steindachner, Sitzs. Ber.  
Akad. Wiss. Wien, math.-naturw.  
Kl., vol. 115, pt. 1, p. 1383, 1906  
(Upolu). — Seale and Bean, Proc.  
U. S. Nat. Mus., vol. 33, p. 242, 1907  
(Zamboanga).



44 (Zamboanga).  $\frac{1}{m}$  Fowler, Bishop  
Mus. Bull., no. 22, 1925, p. 26  
(Honolulu).  $\frac{1}{m}$  Barnard, Ann. South  
African Mus., vol. 21, p. 2, 1927, p. 585  
( Natal coast, Delagoa Bay ).  $\frac{1}{m}$   
Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 71, 1927, p. 7 (Poeloe Toekus Island,  
Sumatra).  $\frac{1}{m}$  Herre and Montalban,  
Philippine Journ. Sci., vol. 36, no. 1,  
May 1928, p. 130, pl. 2, fig. 3 (Luna,  
Manga Island, Puerto Galera and  
Calapan, Tablas, Dinagayan, Bungan  
and Banaran Islands).  $\frac{1}{m}$  Fowler, Mem.  
Bishop Mus., vol. 10, 1928, p. 233, pl. 21 A  
(Honolulu, Tubuai, Tahiti, Nukuhiva,  
Faté, Marcus Island, French Frigate  
Shoal, Johnston Island, Apia, Fanning  
Island, Funafuti, Borabora, Rikitea,  
Makemo, Savau, Guam, New Guinea,  
Bonin and Society Islands).



- Lloyd, Rec. Indian Mus., vol. 1, p. 228, 1907.

^ - Regan, Ann. Natal Mus., vol. 1, pt. 3, p. 245, <sup>May 15,</sup> 1908 (Durban Bay). -

Gilchrist and Thompson, Ann. South Afric. Mus., vol. 6, <sup>pt. 2,</sup> p. 188, 1908 ~~xxx~~ (Natal; Inner Harbor, Durban); Ann. Durban Mus., vol. 1, no. 4, p. 352, <sup>May 21,</sup> 1917 (reference).

Equula odentula Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876 (Bangkok) (error).

Equula edentata Saville-Kent, Prelim. Rep. Food Fish Queensland, p. 5, 1889, Great Barrier Reef, p. 290, 1893 (reference).



34802 U.S.N.M. Tahiti. June 12-15,  
1883. Dr. W. H. Jones. Length 220 mm.

As Upeneus multifasciatus.

51737 U.S.N.M. Apia, Samoa. Bureau  
of Fisheries. Length 110 to 255 mm.  
5 examples. Types of Pseudupeneus moana.

56271 U.S.N.M. Bacon, Philippines.  
Bureau of Fisheries (No. 3249). Length 223 mm.

58047 U.S.N.M. Zamboanga. Dr. E. A.  
Mearns. Length 190 to 231 mm. 3 examples.

66000 U.S.N.M. Kusaie, Carolines.  
Albatross Collection 1900. Length 115 mm.

71677 U.S.N.M. Kafa, Okinawa, Riu Kiu.  
Albatross Collection 1906. Length 133 to 172 mm.  
3 examples.

84233 U.S.N.M. Zamboanga, Dr. Fred  
Baker. Length 168 to 190 mm. As Upeneus  
multifasciatus.



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Leiognathus edentulus: Bleeker,  
Ned. Tijds. Dierk., vol. 1, p. 235,  
1863 (reference); vol. 2, p. 148,  
1865 (reference); Rech. Faune  
Madagascar, pt. 4, p. 98, 1874  
(reference); Verh. Akad. Wet.  
Amsterdam, vol. 18, p. 18, 1879  
(reference). — Fowler, Journ.  
Acad. Nat. Sci. Philadelphia,  
ser. 2, vol. 12, p. 517, June 10, 1904  
(Padang); Proc. Acad. Nat. Sci.  
Philadelphia, vol. 57, p. 500,  
July 1905 (Baram, Borneo). —  
Jordan and Dickerson, Proc. U.  
S. Nat. Mus., vol. 34, p. 610, 1908  
(Suva). — Kendall and Goldsborough,  
Mem. Mus. Comp. Zool., vol. 26, p.  
274, 1911 (Suva). — Bean and Weed,  
Proc. U. S. Nat. Mus., vol. 42, p. 604, 1912  
(Batavia). — Fowler, Bull. Bishop  
Mus., no. 22, p. 10, 1925 (Guam).



Leiognathus edentulum Jordan and  
Evermann, Proc. U. S. Nat. Mus.,  
vol. 25, p. 338, 1902 (Formosa). —  
Jordan and Richardson, Mem. Carnegie  
Mus., vol. 4, no. 4, p. 180, Aug. 28, 1909  
(on above).



23294 and 23295, 23622 and 23623.  
Tataan, Simulac Island. February 19,  
1908. Length 54 to 78 mm.

23236 and 23237. Tataan. February  
20, 1908. Length 23 to 71 mm. [164.]  
6 examples. Dark smoky on back,  
sides lighter with pearl pink  
reflections. Snout greenish yellow.  
Lower preorbital edge golden. Dark  
line backward across cheek. Blackish  
band behind middle of caudal peduncle  
transversely. First dorsal smoky,  
second dorsal pinkish. Caudal dark  
basally, terminally paler, tipped with  
brown. Anal pink. Paired fins very  
pale pink.

6 examples. Tataan. February 21, 1908.  
Length 44 to 70 mm.

24058. Tonguil Island, south of Zamboanga.  
September 14, 1909. Length 50 to 61 mm. 3 examples.



Leiognathus argenteus Lacépède,  
Hist. nat. Poiss., vol. 4, pp. 448, 449,  
1802 (type locality, Tranquebar).

— McCulloch, Austral. Mus. Mem.,  
No. 8, pt. 2, p. 145, 1925 (reference).

Equula argentea de Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, No. 3,  
p. 542, November 29, 1884 (type  
locality, Cape York, Queensland;  
as a new species).

Equula argentea Saville-Kent, Prelim.  
Rep. Food Fish. Queensland, p. 10, 1889;  
Great Barrier Reef, p. 369, 1893  
(reference).



~~1195~~

7220 [1233]. Alibijaban Island, Ragay  
Gulf, Luzon. March 6, 1909. Length  
234 mm.

16341. Atulayan Island. June 18, 1909.  
Length 231 mm.

6756 to 6763. Beach at village near  
Chase Head, Endeavor Strait. December  
22, 1908. Length 77 to 113 mm.

8636, 8670. Biri Channel. June 22, 1909.  
Length 250 to 265 mm.

<sup>19771 and</sup>  
19772. Bolalo Bay, Palawan Island.  
December 21, 1908. Length 80 to 85 mm.  
3 examples.

12001. Cabugan Island, Hinunangan  
Bay, Leyte. July 30, 1907. Length 190 mm.

17416. Candaraman Island. January 4,  
1909. Length 159 mm.

7520, 16339. Chase Head, Endeavor  
Strait, Palawan. December 22, 1908.  
Length 204 to 276 mm.



*Equula ensifera Valenciennes*, Hist.  
 Nat. Poiss., vol. 10, p. 66, 1835 (type  
 locality, Pondicherry; Mauritius).  
 — Bleeker, Nat. Tijds. Ned. Indie,  
 vol. 1, p. 260, 1850 (Bandjermassing);  
 vol. 2, p. 210, 1851 (Boeloekomba),  
 p. 416 (Sambas); vol. 3, p. 237, 1852  
 (Wahai), p. 409 (Sampit), p. 409  
 (Bandjermassing), p. 741 (Boeloekomba).  
 Verh. Batavia. Genoot. (makreel),  
 vol. 24, p. 80, 1852 (Batavia; Bandjer-  
 massing); Nat. Tijds. Ned. Indie,  
 vol. 5, p. 154, 1853 (Macassar), p.  
 428 (Sambas), p. 544 (Meauwen Bay);  
 vol. 6, p. 51, 1854 (Sindangole,  
 Halmaheira); vol. 7, p. 227, 1854  
 (Macassar), p. 312 (Bantem; Anger;  
 Tjiringin; djungkulon), p. 361  
 (Batjan); vol. 8, p. 152, 1855



~~1194~~

outer portions of the ventrals do not seem to have been retained in my specimens, as I find no traces at present. Moreover the dark bands on the predorsal and at the spinous dorsal are a little different from those of Günther's figure and my materials. My specimen shows last dorsal ray  $1\frac{2}{3}$  to  $1\frac{7}{8}$  in head. I have followed most writers in the restriction of Mullus trifasciatus Lacépède for this species. The original figure, while still quite crude, seems to have been intended for the species as here understood.



(Bandjermassing), p. 296 (Ternate);  
 vol. 9, p. 282, 1855 (Macassar), p.  
 394 (North Pasuruan), p. 493  
 (Amasing and Madawang Rivers,  
 Batjan); vol. 11, p. 385, 1856  
 (Kajeli, Buru), p. 419 (Muntok,  
 Banka); vol. 12, p. 215, 1856 (Lias);  
 vol. 13, p. 384, 1857 (Batjan); Act.  
 Soc. Sci. Ind. Neerl., vol. 2, no.  
 6, p. 3, 1857 (Kahajan, Borneo);  
 no. 7, p. 5, 1857 (Amboina); vol.  
 3, no. 4, p. 3, 1857-58 (Tanawanko);  
 no. 6, p. 2, 1857-58 (Sinkawang,  
 Borneo); no. 9, p. 4, 1857-58  
 (Trusmi, Sumatra); Nat. Tijds.  
 Ned. Indie, vol. 15, p. 242, 1858  
 (Singapore); vol. 16, p. 26, 1858  
 (Tiboe), p. 407 (Japara, Java);  
 Act. Soc. Sci. Ind. Neerl.  
 (Sumatra), vol. 8, p. 12, 1859



Caudal pale brown, upper and lower edges narrowly dusky. Paired fins pale brownish. Ventrals pale yellowish internally and outer edges deep brown.

East Indies, Philippines, China, Riu Kiu, Melanesia, Micronesia, Polynesia. My specimens agree largely with Günther's excellent figure, except he does not show the dark postocular blotch and the last dorsal ray is much shorter. Both these characters are, however, well shown in Bleeker's figure of Parupeneus multifasciatus. Bleeker further shows the dark lateral streak or band on the snout, only very slightly evident in some of my material. The transverse gamboge bars he shows on the



(Benculen), p. 14 (Tandjong); Nat.  
 Tijds. Ned. Indië., vol. 20, p. 141,  
 1859-60 (Badjoa, Boni), p. 219  
 (Tandjon), p. 332 (Leru); vol. 21,  
 p. 138, 1860 (Muntok, Banka);  
 vol. 22, p. 239, 1860 (Bali). — Günther,  
~~Cat. Fish. Brit. Mus., vol. 2, p. 498,~~  
~~1860.~~

— Guichenot, Notes Ile Reunion,  
 vol. 2, p. 26, 1862; Mém. Soc. Sci.  
 Nat. Cherbourg, ser. 2, vol. 2, p.  
 146, 1866 (Madagascar). — Jouan,  
 Mém. Soc. Sci. Nat. Cherbourg,  
 ser. 2, vol. 5, p. 106, 1870 (Seychelles).  
 — Kner, Reise Novara, Fische, p. 166, 1865  
 (Java).



Then another similar band or blotch from greater part of spinous dorsal base and posteriorly or from interdorsal region narrow transverse band 2 or 3 scales wide. At soft dorsal base blackish brown broad band 3 scales wide, extends from greater anterior part of soft dorsal. Posteriorly or to blackish brown saddle on caudal peduncle area for 4 or 5 scales in extent pale yellowish. Blackish brown blotch on caudal peduncle 3 or 4 scales in extent. Spinous dorsal pale brown, darker terminally on membranes. Soft dorsal, inclusive of long last ray, blackish basally, upper half with 2 or 3 brown longitudinal bands. Anal whitish, with 4 or 5 brown longitudinal bands.



Leiognathus ensiferus Jordan and  
Richardson, Bull. Bur. Fisher.,  
vol. 27, p. 253, 1907 (1908) (Manila;  
Iloilo; Cavite).



lower preopercle edge. Tubes in lateral line with 4 to 8 tubules. Scales with 6 or 7 basal radiating striae, 135 to 141 apical denticles, with 2 or 3 transverse series of basal radiating striae; circuli very fine.

D. VIII — I, 8, I, third spine  $1\frac{2}{5}$  to  $1\frac{3}{5}$  in head, first branched ray  $2\frac{7}{8}$  to 3; A. I, 6, I, first branched ray  $2\frac{7}{8}$  to 3; caudal  $1\frac{1}{8}$  to  $1\frac{1}{3}$ , forked, lobes pointed; least depth of caudal peduncle  $2\frac{2}{3}$  to 3; pectoral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ .

Pale brown above, paler to whitish on sides and below. Dark brown postocular blotch, close behind and about equal to eye. A predorsal brown saddle like area 4 scales wide down behind shoulder.



Equula caballa Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 73, 1835  
(type locality, Red Sea; Malabar; Bombay;  
Guam).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 499, 1860 (Malay Peninsula).

— Bleeker, Journ. Indian Archip.,  
vol. 2, p. 633, 1848 (Boma,  
Sumbawa); Verh. Batavia.

Genoot. (Madura), vol. 22, p. 5,

1849 (Kammal; Tanjong; Sumanap);

— Jerdon, Madras Journ. Lit. Sci., p. 138, 1851. — Bleeker, Verh. Batavia Genoot.  
(Nat. Ichth. Bengal), vol. 25,

p. 46, 1853 (reference).

— Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1128, 1849  
→ (1850) (Pinang; Singapore).

— Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21,  
p. 467, 1871 (Red Sea).

— Castelnau, Proc. Zool. Soc.

Victoria, vol. 2, p. 114, 1873

(Noumea, New Caledonia).

— Klunzinger, Sitzs. Ber. Akad. Wiss. Wien,  
Math.-Naturw. Kl., vol. 80, pt. 1, p. 379, 1879 (1880)  
(Port Darwin; Cleveland Bay).



Depth  $3\frac{1}{5}$  to  $3\frac{1}{3}$ ; head 3 to  $3\frac{1}{5}$ , width  $2\frac{1}{5}$  to  $2\frac{1}{4}$ . Snout  $1\frac{4}{5}$  to  $1\frac{5}{6}$  in head; eye 5 to 6,  $2\frac{1}{2}$  to 3 in snout,  $1\frac{1}{4}$  to  $1\frac{2}{3}$  in interorbital; maxillary reaches  $\frac{3}{5}$  in snout, expansion  $\frac{1}{5}$  greater than eye, length  $2\frac{3}{5}$  to  $2\frac{3}{4}$  in head; barbels reach within 2 scales of ventral, length  $1\frac{1}{5}$  to  $1\frac{1}{3}$  in head; teeth rather large, uniserial in jaws, none on palate; interorbital  $3\frac{1}{8}$  to  $3\frac{1}{2}$  in head, convex. Gill rakers 7 + 28, lanceolate, equals gill filaments or  $1\frac{1}{4}$  in eye.

Scales with 27 to 29 in lateral line to caudal base and 2 or 3 more on latter; 3 above, 7 below, 14 predorsal forward to nostrils; 3 rows below eye on cheek to -



Egmontia cabella Rüppell, Neue Wirbelth;  
Fische, pp. 51, 52, 1835 (reference).



197  
8072, 14055 and 14056, 15781 and 15782.

Harol Island, east of Zamboanga.

September 9, 1909. Length 46 to 70 mm.

23367. Santa Cruz Island, Marinduque.

April 24, 1908. Length 50 to 75 mm.

6 examples.

5 examples. Simaluc, Bisibisi Island.

September 23, 1909. Length 23 to 37 mm.

24005. Sitaniki Reef. September 24, 1909.

Length 80 mm.

3 examples. Sulade Island, vicinity of Jolo. September 17, 1909. Length 31 to 55 mm.

4642. Tambun Sigumbul, Tongul Island, south of Zamboanga. September 14, 1909.

Length 63 to 66 mm. 2 examples.

23475. Tapiantana Island, south of Zamboanga. September 13, 1909. Length 14 mm.

4 examples. Tataan, Simulac Island.

February 10, 1908. Length 27 to 36 mm.



Leiognathus caballa Jordan and  
Richardson, Bull. Bur. Fisher.,  
vol. 27, p. 253, 1907 (1908) (Manilla;  
Iloilo; Aparri; Cavite).



Subic Bay, Iloilo, Hamilo, Mindoro,  
Sibuyan, Bantayan, Agutaya,  
Jordan, Puerto Princesa, Zamboanga,  
Samal Island).



Equula serrulifera Richardson,  
Voy. Erebus and Terror,  
 p. 137, pl. 59, fig. 12-14 (fig.  
 restored), 1848 (type locality,  
 "Sydney, New South Wales" =  
 likely erroneous). — Bleeker,  
Verh. Kon. Akad. Wet. Amsterdam,  
 vol. 2, p. 11, 1855.

Leiognathus serrulifer McCulloch,  
Austral. Mus. Mem., No. 5, pt. ,  
 p. 212, 1929 (reference). —  
Whitley, Mem. Queensland  
Mus., vol. 10, pt. 2, p. 114, March  
 30, 1932 (note).



Pseudupeneus moana Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, 1905 (1906), p.  
274. Apia, Samoa.  $\frac{1}{m}$  Seale, Occas. Papers  
Bishop Mus., vol. 4, no. 1, 1906, p. 48  
(Tahiti, Tubuai, Mangareva, Rarotonga,  
Fate', Nukuniva).  $\frac{1}{m}$  Snyder, Proc. U. S.  
Nat. Mus., vol. 32, 1907, p. 89, fig. 1 (Samoa).  
 $\frac{1}{m}$  Evermann and Seale, Bull. Bur. Fisher.,  
vol. 26, 1906 (1907), p. 88 (Bacon).  $\frac{1}{m}$  Seale  
and Bean, Proc. U. S. Nat. Mus., vol. 33,  
1907, p. 245 (Zamboanga).  $\frac{1}{m}$  Evermann  
and Goldsborough, Mem. Mus. Comp.  
Zool., vol. 26, 1911, p. 293 (Kusaie, Carolines).  
 $\frac{1}{m}$  Jordan and Snyder, Proc. U. S. Nat.  
Mus., vol. 29, 1916, p. 354 (Tahiti).  
Upeneus moana Snyder, Proc. U. S. Nat.  
Mus., vol. 42, 1912, p. 501 (Okinawa).  $\frac{1}{m}$   
Herre and Montalban, Philippine Journ.  
Sci., vol. 36, no. 1, May 1928, p. 24, pl. 4,  
fig. 2 (Santo Domingo de Bases, La Union,



Equula ruconius (not Buchanan-Hamilton) Day, Proc. Zool. Soc. London, p. 322, 1869.

Equula decora de Vis, Proc. Linn. Soc. New South Wales, vol. 9, no. 3, p. 543, November 29, 1884 (type locality, Cape York, Queensland).

— Saville-Kent, Prelim. Rep. Food Fish. Queensland, p. 10, 1889

(reference); Great Barrier Reef, p. 369, 1893 (reference). — Whitley, Mem. Queensland Mus., vol. 10, pt. 2, p. 104, fig. 1, 1932 (type of Equula decora; Johnstone River, Queensland).

Leiognathus decorus McCulloch and Whitley, Mem. Queensland Mus., vol. 8, p. 145, 1925 (reference). — McCulloch, Mem. Austral. Mus.,



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Karbaralong, Beo, Lirung, Sayleyer,  
Binongka, Banda).

Parupeneus multifasciatus (not Quoy  
and Gaimard) Bleeker, Verslagen Med.  
Kon. Akad. Wetensch. Amsterdam,  
series 2, vol. 2, 1868, p. 346 (Reunion);  
→ Verhandel. Kon. Akad. Wetensch.  
Amsterdam, vol. 15, no. 3, 1875, p. 20  
(Celebes, Halmahera, Ternate, Batjan,  
Obi, Ceram, Amboina, Banda, Goram, Oru,  
Timor, Flores); Atlas Ichth. Ind. Neerland;  
vol. 9, 1877, pl. (4) 374, fig. 4.

[Rech. Faune Madagascar, Pollen et Van  
Dauw, 1874, p. 42, pl. 17, fig. 3 (Madagascar);

Upeneus multifasciatus Day, Fishes of  
India, pt. 1, 1875, p. 124, <sup>1</sup>/<sub>2</sub> Peters,  
Monatsber. Akad. Wiss. Berlin, 1876, p.  
438 (Mauritius). <sup>1</sup>/<sub>2</sub> Macleay, Proc. Linn.  
Soc. New South Wales, vol. 6, 1883, p. 264



No. 5, p. 213, 1929 (reference).

Equula spiniceps Saville-Kent,  
Phelim, Rep. Food Fish. Queensland,  
p. 10, 1889 (nomen nudum); Great  
Barrier Reef, p. 369, 1893 (nomen  
nudum; type locality, Queensland).

Leiognathus spiniceps McCulloch  
and Whitley, Mem. Queensland  
Mus., vol. 8, p. 145, 1925 (reference).

Leiognathus splender (not Cuvier)  
Jordan and Evermann, Proc. U. S.  
Nat. Mus., vol. 35, p. 338, 1902  
(Keerun, Formosa). — Jordan and  
Seale, Proc. U. S. Nat. Mus., vol.  
28, p. 776, 1905 (Negros).



cm 179

Pseudupeneus trifasciatus (Lacépède)

Mullus trifasciatus Lacépède, Hist. nat. Poiss., vol. 3, 1802, pp. 383, 404, pl. 15, fig. 1.

No locality.  $\frac{1}{m}$  Cuvier, Hist. nat. Poiss., vol. 3, 1829, p. 468 (Caroline).

Upeneus trifasciatus Jenyns, Voy.

Beagle, Fish, 1842, p. 25 (Tahiti).  $\frac{1}{m}$

Günther, Cat. Fishes Brit. Mus., vol. 1,

1859, p. 407 (China, Amboyna, Celebes,

Ceylon, India).  $\frac{1}{m}$  Kner, Reise Novara,

Fische, 1865, p. 71 (Tahiti).  $\frac{1}{m}$  Günther,

Journ. Mus. Godeffroy, vols. 2-3, pts. 5-

6, 1874, p. 59, pl. 44, fig. 13 (not fig. C).

(China, Polynesia; but not Hawaiian

material).  $\frac{1}{m}$  Martens, Preuss. Exped.

Ost Asien, 1876, p. 387 (Larentuba,

Flores).  $\frac{1}{m}$  Macleay, Proc. Linn. Soc.

New South Wales, vol. 7, 1882, p. 245

(New Guinea).  $\frac{1}{m}$  Meyer, Linn. Soc.

Espan. Hist. nat. Madrid, vol. 14, 1885,



Leiognathus obscura Seale,  
Occas. Pap. Bishop Mus., vol. 1,  
no. 3, p. 74, 1900 (type locality,  
Guam).

Leiognathus dussumieri (not  
Valenciennes) Jordan and Seale,  
Bull. Bur. Fisher., vol. 26, p. 15,  
1906 (1907) (Cavite). — Evermann  
and Seale, Bull. U. S. Fish Comm.,  
vol. 26, p. 67, 1906 (1907) (San  
Fabian).



to blackish basally. Front or outer portions of ventral with deep brown shadings.

Diagnosis. <sup>1/2</sup><sub>3</sub> differs from all the known species in its genus in its swarthy coloration, both in the presence of dark saddles on the back and each row of scales with longitudinal dark narrow band.

Type, no. 65639, U.S. N.M. Cook's Bay, Easter Island. Albatross Collection (3196). Length 285 mm. As Pseudupeneus multifasciatus.

<sup>9</sup>  
(Orientalis, for Easter Island.)



Leioognathus de-visi Whitley,  
Rec. Austral. Mus., vol. 17, pt. 3,  
p. 112, fig. 2, June 27, 1929  
(on Equula argentea de Vis).  
— McCulloch, Austral. Mus.  
Mem., vol. 5, p. 214, 1920 (reference).



above and broad dark saddle  
before first dorsal. All along  
edge of back dark blotches or  
saddles, one at spinous dorsal  
base, one at interdorsal, one at  
soft dorsal base and one on front  
of caudal peduncle; these all  
reflected obscurely as transverse  
bands down on side of body. Each  
row of scales above lateral line  
and below with longitudinal narrow  
dark bands, barely half wide as  
pale interspaces. Iris golden brown.  
Barbels light brown. Spinous dorsal  
dusky brown. Soft dorsal blackish  
brown basally, paler terminally.  
Anal dull brown, membranes with  
darker flakes of brown. Caudal  
dusky, base largely blackish brown.  
Paired fins brown. Pectoral dusky



(2213)

Depth  $1\frac{3}{4}$  to  $1\frac{9}{10}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{5}$ , width 2 to  $2\frac{1}{10}$ . Snout  $2\frac{4}{5}$  to 3 in head; eye 3 to  $3\frac{1}{8}$ ,  $1\frac{1}{8}$  to  $1\frac{1}{5}$  in snout,  $1\frac{1}{10}$  to  $1\frac{1}{8}$  in interorbital; maxillary reaches eye, expansion  $3\frac{1}{2}$  in eye, length  $2\frac{1}{2}$  to  $2\frac{3}{4}$  in head; interorbital 3 to  $3\frac{1}{10}$ , little elevated, with broad median depression. Gill rakers 5 to 7 + 14 to 18, lanceolate,  $\frac{1}{2}$  of gill filaments, which  $2\frac{1}{4}$  in eye.

Tubular scales 56 to 58 in lateral line to caudal base; 24 above, 36 below. Scales very deciduous, nearly all fallen in preserved specimens. Breast naked to pectoral and ventral bases.



2214

D. VIII, 15, I or 16, I, second spine  
1 to 1  $\frac{1}{2}$  in head, first ray 4 to  
4  $\frac{1}{4}$ ; A. III, 14, I, second spine 1 to  
2, first ray 3  $\frac{2}{5}$  to 4; least  
depth of caudal peduncle 4 to  
4  $\frac{3}{4}$ ; pectoral 1  $\frac{1}{4}$  to 1  $\frac{1}{3}$ , rays  
II, 17; ventral rays I, 5, fin  
2 to 2  $\frac{1}{5}$  in head; caudal 1 to  
1  $\frac{1}{8}$ , forked.

Back drab gray, paler to  
whitish below. Iris deep  
gray. End of snout dark brown.  
Lips pale or whitish. Fins  
pale brown, inside pectoral  
axil blackish.



Arabia,  
Red Sea, Beira, Zanzibar, Chinde,  
Delagoa Bay, Natal, Madagascar,  
Mauritius, India,  
Ceylon, Malaya, East Indies,  
Philippines, Siam, Formosa,  
Riu Kiu, North Australia, Queensland,  
Melanesia, Polynesia. Sometimes  
enters brackish water, rivers and  
lakes.



7220. ~~Apurri market.~~ November  
19, 1908. ~~One example.~~



2216

24 examples. Alimango River,  
Burias Island. March 5, 1909.

Length 32 to 75 mm.

Two examples. Aparri, Luzon.  
November 19, 1908. Length 108 to  
128 mm.

20137. Bacoor, Luzon. June 15,  
1908. Length 95 mm.

13958. Balalo Bay, Palawan.  
December 21, 1908. Length 99 mm.

5464 to 5466, 5468, 5469. Basud  
River, Luzon. June 13, 1909. Length  
82 to 94 mm.

5467, 11008, 22652, 22653.  
Basud River. June 15, 1909. Length  
30 to 177 mm.

Twenty examples. Buena Vista,  
Guimaras Island. January 14, 1909.  
Length 43 to 111 mm.



424

more on latter; 2 above, 4 below, 9 predorsal forward at least to eye center, but 2 rows shown on cheek; caudal base scaly; tubes of lateral line shown but slightly branched.

D. VIII - I, 8, third spine  $1\frac{2}{3}$  in head, first branched ray  $2\frac{2}{5}$ ; A. I, 7, spine  $4\frac{1}{8}$ , first ray 3; caudal  $1\frac{1}{6}$ , deeply forked, lobes slender and pointed; least depth of caudal peduncle  $2\frac{3}{4}$ ; pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$ .

Body wine red, with large golden yellow blotch on caudal peduncle. Eyes surrounded by divergent golden lines. Fins red. Dorsal and anal marked with oblique yellow lines posteriorly. Length 265 mm. (Savauge.)

Examinations. Apparently known by its large eye and soft dorsal and anal without posterior points.



Three examples. D. 5461. Caringo Island (W.), N.  $12^{\circ}$  W., 4.9 miles (lat.  $13^{\circ}57'42''$  N., long.  $123^{\circ}06'42''$  E.), east coast of Luzon. In 11 fathoms. June 14, 1909. Length 90 to 104 mm.

8161 [1867]. Cebu market. August 29, 1909. Length 100 mm.

Three examples. Caihola River, Ulugan Bay, Palawan. December 29, 1908. Length 39 to 51 mm.

1448, 1451 to 1453. D. 5361. Corregidor Light, S.  $89^{\circ}$  W., 7.2 miles (lat.  $14^{\circ}24'15''$  N., long.  $120^{\circ}41'30''$  E.), Manila Bay. In 12 fathoms. February 8, 1909. Length 103 to 160 mm. [1140.] 15 examples.

One example. Cotabato, one mile up river, Mindanao. May 20, 1908. Length 91 mm.



1055

(Rev 129) Pseudupeneus chryserydrox (Lacépède)

Mullus chryserydrox Lacépède, Hist. Nat. Poiss., vol. 3, 1802, pp. 384, 406, 408.

Mauritius.

Upeneus chryserydrox Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 470 (Mauritius). —<sup>m</sup>

Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 228 (type).

Upeneus chryseridrox Sauvage, op. cit., 1891, pl. 26, figs. 3-3a.

that fish.  
Mauritius.  
Pisces.

Depth  $3\frac{3}{5}$ ; head 3. Snout  $2\frac{1}{4}$  in head; eye  $3\frac{2}{3}$ ,  $1\frac{3}{4}$  in snout, less than interorbital; maxillary would reach  $\frac{3}{4}$  in snout, expansion  $1\frac{3}{4}$  in eye, length  $3\frac{1}{8}$  in head; barbels reach beyond preopercle, length  $\frac{2}{5}$  in head; interorbital very low.

Scales given as 28 (29 in lateral line on figure to caudal base and 3



20998, 20999, 21000. Creek at  
Spaniard's Hacienda below Tancol,  
Palawan. December 28, 1908. Length  
55 to 72 mm.

19396. Iloilo market. March 28,  
1908. Length 34 mm.

Nine examples. Lingayen Gulf,  
west coast of Luzon. May 11, 1909.  
Length 88 to 108 mm.

11637 to 11640, ~~20414~~, Malampaya  
Island  
~~River~~, Palawan. December 26, 1908.  
Length 112 to 158 mm.

20412, 20414. Malampaya River,  
Palawan. December 26, 1908. Length  
39 to 120 mm. Twelve examples.

33 examples. Malcochin Harbor,  
Linapacan Island. December 19, 1908.  
Length 30 to 57 mm.

One example. Manila Bay, Luzon.  
December 6, 1907. Length 58 mm.



1231

34803 U.S.N.M. Tahiti. Dr. W. H. Jones. June 12-15, 1883. Length 195 mm.

34816 U.S.N.M. Tempe, Marquesas Islands. Dr. W. H. Jones. June 23, 1883. Length 288 mm.

6254 U.S.N.M. Bonin Islands. William Stimpson. Length 250 mm.

52201 U.S.N.M. Apia. Bureau of Fisheries. Length 230 mm.

52375 U.S.N.M. Samoa. Bureau of Fisheries. Length 289 mm.

1 example (with 55510 U.S.N.M.). Hawaiian Islands. Bureau of Fisheries (No. 2521). Length 176 mm. Res Pseudupeneus multifasciatus.

52665 U.S.N.M. Hawaiian Islands. Bureau of Fisheries (No. 03850). Length 295 mm.

71651 U.S.N.M. Iofa, Okinawa, Riu Kiu. Albatross Collection 1906. Length 165 mm.



One example. Manila Bay.  
December 9, 1907. Length 56 mm.

4522. Manila ~~market~~<sup>gm</sup>. December  
12 to 18, 1907. Length 66 to 118 mm.  
Four examples?

11597. Manila market. March  
16, 1908. Length 114 mm.

20308. Manila market. June 17,  
1908. Length 168 mm.



Math.-physik. Klasse, vol. 2, band 6,  
1913, p. 11 (Oman). <sup>1</sup>/<sub>2</sub> Barnard, Ann.  
South African Mus., vol. 21, pt. 2, 1927,  
p. 587 (Delagoa Bay).

Mullus auriflamma (not Forsk.)  
Lacépède, Hist. Nat. Poiss., vol. 3, 1802,  
pl. 13, fig. 1.

Mullus lateristriga Cuvier, Hist. Nat.  
Pois., vol. 3, 1829, p. 463 (on Mullus  
macronemus and Mullus auriflamma  
of Lacépède).

Upeneus lateristriga Rüppell, Neue  
Wirbelth. Fische, 1835, p. 101 (Massana).

<sup>1</sup>/<sub>2</sub> Valenciennes, Règne Animal, Cuvier,  
Ed. 3<sup>e</sup> ll., 1839, pl. 19, fig. 3.

Upeneus lateristriata (Valenciennes and  
Cuvier) Valenciennes, <sup>Règne Animal, Cuvier, 3<sup>e</sup> ll.</sup> ~~op. cit.~~, 1839, p. (opposite  
plate 19). (Error.)

Apogon amherstianus Day, Fishes of India,  
pt. 1, 1875, p. 124 (name in synonymy). Amherst?



2220

22002 to 22004. Hakoda Bay,  
Palawan. December 31, 1908. Length 90  
to 98 mm.

21714. Hato River tidal. June 18,  
1909. Length 118.

Eleven examples. Near mouth of  
Bito River, Cebu, Leyte. July 26,  
1909. Length 49 to 75 mm.

Four examples. Near mouth of  
Tayabas River, Luzon. February 25, 1909.  
Length 82 to 108 mm.

7984. Pagapas Bay, Luzon.  
February 20, 1909. Length 182 mm.

22621. Paluan River, Mindoro.  
December 11, 1908. Length 65 mm.

5005. Panabutan Bay.  
February 6, 1908. Length 131 mm.

21801. Pandanon Island.  
March 24, 1909. Length 68 mm.

Four examples. Pangasinan, Port Calton.  
December 16, 1908. Length 29 to 37 mm.



Sea, Reunion, Mauritius, Zanzibar,  
Hawaiian Islands). <sup>1</sup>/<sub>m</sub> Fowler, Copeia,  
no. 112, November 20, 1922, p. 83 (Hawaii);  
Mem. Bishop Mus., vol. 10, 1928, p. 30  
(Hawaiian Islands); Proc. Acad.  
Nat. Sci. Philadelphia, 1929 (1930), p.  
648 (Honolulu).

Parupeneus macronema Bleeker, Verhand.  
Kon. Akad. Wetensch. Amsterdam,  
vol. 15, no. 3, 1875, p. 24 (Sumatra,  
Celebes, Amboina); Atlas Ichth. Ind.  
Néerland., vol. 9, 1877, pl. (1) 391, fig. 3;  
Verhandel. Kon. Akad. Wetensch.  
Amsterdam, vol. 18, no. 3, 1879, p. 2  
(Mauritius). <sup>1</sup>/<sub>m</sub> Klunzinger, Fische  
Roth. Meer., 1884, p. 51. — Steindachner,  
Denkschr. Akad. Wiss. Wien, math.-  
naturwiss. Klasse, vol. 71, pt. 1, 1907, p.  
138 (Ras Shoab, Vohotra). <sup>1</sup>/<sub>m</sub> Jugmayer,  
Abhandl. Kon. Bayer. Akad. Wiss.,



19699. Port Jamelo, Luzon. July <sup>2221</sup>  
13, 1908. Length 20 to 90 mm. ~~7~~  
Sixty examples.

One example. Port Jamelo.  
July 12, 1908. Length 30 mm.

20269. Port Matalvi, Luzon.  
December 11, 1909. Length 57 mm.  
Two examples.

<sup>19517,</sup>  
19519. Ragay River tidal.  
March 13, 1909. Length <sup>64 to</sup> 87 mm.

20083. River at Hakoda Bay,  
Palawan. December 31, 1908. Length  
33 to 107 mm. Seven examples.

22330. River at Pasacao, Luzon.  
March 9, 1909. Length 60 to 132 mm.  
Three examples.

Three examples. River at Port  
Dupon, brackish water. March 17,  
1909. Length 22 to 30 mm.



Cur<sup>29</sup>

Pseudupeneus macronemus (Lacépède)

Mullus macronemus Lacépède, Hist. Nat. Poiss., vol. 3, 1802, p. 400, pl. 13, fig. 2.

No locality.

Mullus micronemus Playfair, Fishes of Zanzibar, 1866, p. 40 (Zanzibar; Johanna). (Error.)

Upeneus macronemus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 405 (compiled).  $\frac{1}{m}$  Klunzinger, Verhandl. zool. botan. Gesellsch. Wien, vol. 20, 1870, p. 744 (Koseir, Red Sea).  $\frac{1}{m}$  Day, Fishes of India, pt. 1, 1875, p. 123, pl. 3, fig. 1.  $\frac{1}{m}$  Vaillant, Bull. Soc. Philomath., Paris, series 7, vol. 11, 1886-87, p. 59 (Tahiti).  $\frac{1}{m}$  Boulenger, Proc. Zool. Soc. London, 1887, p. 658 (Muscat).  $\frac{1}{m}$  Day, Fauna British India, Fishes, vol. 2, 1889, p. 29, fig. 12.  $\frac{1}{m}$  Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 224 (Red



8557. San Fernando, Union<sup>2222</sup>  
Province, Luzon. March 17, 1908.  
Length 99 mm.

20899. San Miguel Harbor, Ticao  
Island. April 21, 1908. Length 92 mm.

8785, 8786, 8791, 8792, 8794, 8799,  
8800, 8801, 8803, 12634. Santiago River,  
Pagapas Bay, Luzon. February 20, 1909.  
Length 32 to 135 mm. Sixteen examples.  
Two examples. Sorsogon market.

March 12, 1909. Length 83 to 87 mm.

20543. Tilig, Lubang Island.  
July 14, 1908. Length 54 to 88 mm.  
Seven examples.

Eight examples. Ulugan Bay near  
mouth of Baheli River, Palawan.  
December 28, 1908. Length 35 to 48 mm.

17272. Verde del Sur Island,  
Palawan. April 7, 1909. Length 118 mm.



Ceylon, East Indies, Philippines,  
China, Riu Kiu, Polynesia. Epenemus  
atrocingulatus is described:

Head somewhat longer than body depth,  
contained 3 times in body length. Eye  
4 in head,  $1\frac{1}{2}$  in snout, which  $\frac{5}{12}$  of  
head; barbels reach little beyond  
preopercle; interorbital equals eye.  
Scales 27 or 28. D. VIII - I, 8; A. 7.  
Whitish longitudinal streak under scales  
from side of head till under first  
dorsal end or to second dorsal origin  
and above first row of scales above  
lateral line. Black cross band girdles  
back at first dorsal. Black round  
spot at end of second dorsal on lateral  
line, which at 27 or 28 scales. Cheeks  
silvery. First dorsal gray black. Along  
second dorsal narrow dark band. Caudal  
pale. Ventral and pectoral base black.



2223

18303. Makassar River, Makassar,  
Celebes, Dutch East Indies. December  
26, 1909. Length 122 mm.

Ten examples. Sandakan market,  
Sandakan, Borneo. March 2, 1908.  
Length 53 to 98 mm.

14134, 21488. Tifu Bay, Buru.  
December 10, 1909. Length 74 to 110 mm.  
Three examples.

(M) A1004. Locality not given.  
Length 108 mm.

(M) A1005. Locality not given.  
Length 109 mm.



417

where interrupted by white area,  
then leaves small blackish brown  
spot about size of eye on lateral  
line below bases of last dorsal  
rays. Dark triangular area  
horizontally from maxillary groove  
till above pectoral and finally  
joins upper or postocular band  
and pale interruption opposite soft  
dorsal origin. Whole lower surface of  
head, chest, breast and belly to vent  
brownish or swarthy. Spinous dorsal  
dark brown terminally on membranes.  
Soft dorsal basally blackish brown.  
Other fins more or less pale. Larger  
examples have base of caudal and  
lower broad border of caudal dark  
brown. Pectoral <sup>with</sup> dusky brown base.  
Ventral brown, blackish terminally.



2224

U. S. N. M., No. 30614. New Guinea.  
Australian Museum. Length 205  
mm. As Leiognathus edentulus.

U. S. N. M., No. 44765. Rangoon,  
Burma. L. Fea. Length 68 mm.  
As Egusula edentula.

U. S. N. M., No. 56172. Mindanao.  
Bureau of Fisheries (4287).  
Length 72? mm. As Leiognathus  
dussumieri.

U. S. N. M., No. 56261. Mindanao.  
Bureau of Fisheries (4288).  
Length 62? mm. As Leiognathus  
dussumieri.

U. S. N. M., No. 56332. Cavite,  
Dr. G. A. Lung. Length 161 to 175 mm.  
Two examples. As Leiognathus  
dussumieri.



2225  
U. S. N. M., No. 57937. Zamboanga.  
Dr. E. A. Mearns. Length 37 to 61 mm.  
Seven examples. As Leiognathus  
dussumieri. In poor condition.  
Some show traces of 6 or 7 slightly  
darker grayish transverse bars  
on back.

U. S. N. M., No. 57970. Zamboanga.  
Dr. E. A. Mearns. Length 40 mm.?  
Very poorly preserved. As  
Leiognathus dussumieri.

U. S. N. M., No. 58049. Zamboanga.  
Dr. E. A. Mearns. Length 180 to 182 mm.  
Two examples. As Leiognathus  
edentula.

U. S. N. M., No. 59080. Philippines.  
Bureau of Fisheries (3210). Length  
153 mm. As Leiognathus dussumieri.



2226

U. S. N. M., No. 65894. Suva, Fiji.  
Albatross Collection. 1899-1900.

Length 28 to 37 mm. Four examples.  
As Leiognathus edentula.

U. S. N. M., No. 70728. Formosa.  
Y. Tada. Length 86 mm. As  
Leiognathus caballus.

U. S. N. M., No. 72199. Iloilo.  
R. C. Mc Gregor. Length 82 mm.  
As Leiognathus caballus.

U. S. N. M., No. 72220. Southern  
Negros, R. C. Mc Gregor. Length  
80 mm. As Leiognathus caballus.

U. S. N. M., No. 72233. Aparri.  
R. C. Mc Gregor. Length 100 mm.  
As Leiognathus caballus.



U. S. N. M., No. 72640. Java.  
 O. Bryant and W. Palmer. Length  
 115 to 129 mm. Two examples.  
 As Leiognathus edentulus.

U. S. N. M., No. 72641. Java.  
 O. Bryant and W. Palmer. Length  
 107 mm. As Leiognathus edentulus.

U. S. N. M., No. 72642. Batavia,  
 O. Bryant and W. Palmer.  
 Java. April 2, 1909. Length 82 mm.  
 As Leiognathus edentulus.

U. S. N. M., No. 72650. Binoesangen,  
 Java. O. Bryant and W. Palmer.  
 November 9, 1909. Length 75 mm.  
 As Leiognathus splendens?



U. S. N. M., three examples.  
Colombo, Ceylon. Received Sep-  
tember 30, 1859. Captain Putnam.  
Length 179 to 200 mm.

U. S. N. M., three examples (with  
51975 U. S. N. M.). Negros, Dr.  
B. Dean. Length 83 to 86 mm.  
As Leiognathus splendens. No  
black dorsal spot.

A. N. S. P., two examples. Delagoa  
Bay. 1922. H. W. Bell Marley. Length  
132 to 147 mm.

A. N. S. P., seven examples. San  
Fernando. 1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., two examples. Santa  
Maria. 1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., six examples. Vigan.  
1923. Rev. Joseph Clemens.  
Purchased.



A. N. S. P., three examples.  
Orani. 1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., one example. Philippines.  
1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., four examples. Orani.  
1923. Rev. Joseph Clemens. Purchased.  
~~As Leioquathus fasciatus.~~

A. N. S. P., one example. Orion.  
1923. Rev. Joseph Clemens. Purchased.  
~~As Leioquathus fasciatus.~~  
A. N. S. P., one example. Philippines.  
~~As Leioquathus fasciatus.~~

A. N. S. P., one example. Bombay.  
1925. Dr. F. Hallberg. Purchased.  
Length 105 mm.



2230

Leiognathus splendens (Cuvier)

Equula splendens Cuvier, Règne  
Cuvier, ed. 2, vol. 2, p. 212, 1829  
(on Gomorah korah Russell, Fishes  
of Coromandel, vol. 1, p. 48, pl. 61,  
1803, type locality, Vizagapatam).

— Cantor, Journ. Asiatic. Soc. Bengal,  
vol. 18, pt. 2, p. 1131, 1849 (1850) (Pinang).

— Jerdon, Madras Journ. Lit. Sci.,  
p. 138, 1851.

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 501, 1860 (Malay Peninsula;  
Amboyna; China Seas).

— Day, Fishes of Malabar, p. 104, 1865.

— Kner, Reise Novara, Fische, p. 168,  
1865 (Java; Madras).

— Peters, Monatsb. Akad. Wiss. Berlin,  
p. 262, 1868.



Thompson, Mem. Carnegie Mus., vol. 6,

no. 4, September 1914, p. 259 (Misaki).

Jordan and Starks, Ann. Carnegie Mus., vol. 11, nos. 3-4, nov. 5, 1917, p. 455 (Ceylon, Takao, Cavite).

Fowler and Bean, Proc. U. S. Nat.

Mus., vol. 62, 1922, p. 68 (Cebu).

Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 248 (Durban). 1927, p. 286 (Santa

María, Vigan, San Fernando, Orani, Orion, Philippines).

Fowler and Bean, Proc. U. S. Nat. Mus., vol. 71, 1927, p. 8 (Bengkelen, Sumatra).

Fowler, <sup>govn.</sup> Bombay Nat. Hist. Soc., vol. 32, no. 4, May 31, 1928, p. 709 (Ceylon); Mem. Bishop Mus., vol. 10, 1928, p. 235

(copied Günther). Tirant, Service Océanogr. Pêch. Indo Chine, (1929, (late 6<sup>e</sup>)) p. 169 (Phu Yen).

Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 611 (Hong Kong), p. 654 (Padang).



— Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 467, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 239, pl. 52, fig. 3, 1876. — Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876 (Singapore; Batjan). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore).

— Macleay, Proc. Linn. Soc. New South Wales, vol. 9, pt. 1, p. 25, 1884 (Port Denison). — Klunzinger, Fische Roth. Meer., vol. 1, p. 107, 1884. — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 26, 1885 (Manado, Celebes). — Gorgona, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 17, p. 290, 1888 (Manila Bay). — Day, Fauna British India, Fishes, vol. 2, p. 188, 1889.

— Weber, Siboga Exped., vol. 57, Fische, p. 267, 1913 (Obi major).

— Beaufort, Bijdr. Dierk. Amsterdam, p. 120, 1913 (Macassar).



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23298. Maribojoc Bay, Maribojoc,  
B. hol. March 26, 1909. Length 42 mm.

23637. Murcielago Bay, Mindanao.  
April 21, 1909. Length 87 mm.

[1043.] Nakoda Bay, Palawan Island.  
December 31, 1908. Length 70 mm.

20570, 23215 to 23221. Opol, Mindanao.  
August 4, 1909. Length 74 to 92 mm.

23228 and 23229. Oyster Inlet, Ulugan  
Bay, Palawan. December 28, 1908. Length 67  
to 71 mm.

7 examples. Pangasinan Islands, vicinity  
of Jolo. February 13, 1908. Length 36 to 66 mm.

21558. Pilas Island, south of Zamboanga.  
September 12, 1909. Length 37 to 73 mm.

7 examples.

1 example. Port Banalacan, Marinduque.  
February 23, 1909. Length 35 mm.

5 examples. Port Ciego, Balabac. January 3,  
1909. Length 46 to 88 mm.



Leiognathus splendens Bleeker,  
Ned. Tijds. Dierk., vol. 1, p. 270,  
1863 (Natapuru, Tenor); vol. 2,  
p. 31, 1865 (Manila Bay), pp. 34, 774  
(Siam); Verslag. Kon. Akad. Wet.  
Amsterdam, ser. 2, vol. 7, p. 36,  
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Kota Maru and Balikpapan, Borneo;  
Manado; Ternate; Ambona; Obi major).



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Biliton, Java, Madura, Bali, Borneo,  
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Burru, Ceram, Lombok, Timor). <sup>1</sup><sub>2m</sub> Peters,  
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Egmula gomorah Valenciennes, Hist.  
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~~p. 51, 1835~~ <sup>hat. Geneesk. Arch. Ned. Ind., vol. 2,</sup>  
<sup>p. 518, 1845 (Batavia);</sup>  
— Bleeker, <sup>^</sup>hat. Tijds. Ned. Indie,  
vol. 1, p. 160, 1850 (Banka); vol. 2,  
p. 210, 1851 (Boeloekomiba); vol. 3,  
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Banka), p. 740 (Macassar); Verh.  
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Rembang, Surabaya, Pasuruan,  
Sibogha, Padang); (Nat. Ichth.  
Bengal), vol. 25, p. 46, 1853 (reference);  
hat. Tijds. Ned. Indie, vol. 6, p.  
234, 1853 (Ceram); vol. 6, p. 457,  
1854 (Amboina); vol. 7, p. 226,



C<sup>me</sup> 129

1677

Sillago sihama (Forsk.)

Atherina sihama Forsk., Descript. Animal.,  
1775, <sup>sc</sup>pp. XIII, 70. Lohaja, Red Sea. <sup>1</sup>/<sub>2</sub> Bonnaterre,  
Tabl. Ichth., 1788, p. 178 (Red Sea). <sup>1</sup>/<sub>2</sub>

Gmelin, Syst. Nat. Linn., vol. , 1789, p. 1396  
(Red Sea). <sup>1</sup>/<sub>2</sub> Lacépède, Hist. Nat. Poiss.,  
vol. 5, 1803, pp. 371, 373 (Arabia).

Platycephalus sihamus Schneider, Syst.  
Ichth. Bloch, 1801, p. 69 (Red Sea).

Sillago sihama Rüppell, Atlas Reise nördl.  
Afrika, 1825, p. 9, pl. 3, fig. 1 (Red Sea);  
Neue Wirbelth. Fische, 1835, pp. 100, 103 (note).

<sup>1</sup>/<sub>2</sub> Günther, Cat. Fishes Brit. Mus., vol. 2, 1860,  
p. 243 (Red Sea, Ceylon, Malayan Peninsula,  
Ambouyna, Philippines, Canton, China, Nepal);  
Proc. Zool. Soc. London, 1861, p. 221 (Nepal specimen).

<sup>1</sup>/<sub>2</sub> Gill, Proc. Acad. Nat. Sci. Philadelphia,  
1861, p. 504 (compiled). <sup>1</sup>/<sub>2</sub> Day, Fishes of Malabar,  
1865, p. 47; Proc. Zool. Soc. London, 1865, p. 18  
(Cochin, Malabar Coast). <sup>1</sup>/<sub>2</sub> Bleeker, Nederl.  
Tijdschr. Dierk., vol. 2, 1865, p. 56 (Amoy).



227, 1853 (Macassar), p. 313 (Amber);  
vol. 8, p. 393, 1855 (Amboina); vol.  
9, p. 282, 1855 (Macassar), p. 394  
(North Pasuruan, Java); vol. 12,  
p. 193, 1856 (Ternate), p. 215  
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2, no. 7, p. 5, 1857 (Amboina);  
Nat. Tijds. Ned. Indie, vol. 13,  
p. 56, 1857 (Kajeli, Buru), p. 384  
(Batjan); vol. 16, p. 407, 1858  
(Japara, Java); vol. 17, p. 130,  
1858-59 (Litopoe, Temor), p. 143  
(Boleling, Bali); vol. 18, p. 353,  
1859 (Bawean); vol. 20, p. 206,  
1859-60 (Boleling, Bali), p. 237



Depth  $4\frac{1}{2}$ ; head  $3\frac{1}{5}$ , width  $1\frac{7}{8}$ .  
Snout  $2\frac{1}{2}$  in head; eye  $3\frac{2}{3}$ ,  $1\frac{2}{5}$  in  
snout, greater than interorbital;  
maxillary reaches  $1\frac{2}{5}$  in snout, length  
 $3\frac{7}{8}$  in head; teeth fine, villiform,  
in bands in jaws and on vomer;  
interorbital  $4\frac{1}{2}$  in head, nearly level  
or only slightly depressed; preopercle  
edge entire. Gill rakers  $4+9$ ,  
lanceolate,  $1\frac{3}{4}$  in gill filaments,  
which  $2\frac{1}{3}$  in eye.

Scales 54 in lateral line to caudal  
base and 13 more on latter; 5 above,  
8 below, 24 predorsal forward to  
nostrils, 2 rows on cheek below eye;  
caudal finely scaled basally and



(Singapore), p. 449 (Singapore).



Can 179

1070

Sillago macrolepis Bleeker

Sillago macrolepis Bleeker, Natuurk. Tijdschr.  
Nederl. Indië, vol. 17, 1858-59, p. 166.

Batavia; Boeleng, Bali. <sup>1</sup> Gill, Proc.

Acad. Nat. Sci. Philadelphia, 1861, p. 504  
(compiled). <sup>1</sup> Günther, Cat. Fishes Brit.

Mus., vol. 2, 1861, p. 246 (compiled). <sup>1</sup>

Bleeker, Verhandel. Kon. Akad. Wetensch.  
Amsterdam, vol. 14, 1874, p. 72 (Java; Bali);

Atlas Ichth. Ind. Néerl., vol. 9, 1877,  
pl. (1) 389, fig. 1. <sup>1</sup> Meyer, An. Soc. Españ.

Hist. Nat. Madrid, vol. 14, 1885, p. 28

(Mianado, Celebes). <sup>1</sup> Fowler, Mem. Bishop

Mus., vol. 10, 1928, p. 235 (copied Günther).

Sillago maculato (not Quoy and Gaimard)

Seale and Bean, Proc. U. S. Nat. Mus., vol.

33, 1907, p. 245 (Zamboanga). (misprint.)



Equula gomora Rüppell, Neue Wirbelth.  
Fische, pp. 51, 52, 1835 (reference).

Leiognathus gomorah Bleeker, Ned.  
 Tijds. Dierk., vol. 1, p. 235, 1865  
(reference).



1922

Island, Marinduque. February 24, 1909.  
Length 53 to 60 mm.

~~23990 to 23993. Cataingan Bay, Masbate.~~  
~~April 18, 1908. Length 51 to 62 mm.~~

~~16102. Cataingan Bay. May 14, 1909.~~  
~~Length 66 mm.~~

~~18397. Cebu market. April 4, 1908.~~  
~~Length 96 mm.~~

~~23505 to 23507. Dalaganem Island,~~  
~~eastern Palawan. April 8, 1909. Length~~  
~~70 mm.~~

~~23340, 23355 to 23357. Endeavor Strait,~~  
~~north west coast of Palawan. December~~  
~~22, 1909. Length 61 to 69 mm.~~

~~16315. Endeavor Strait. December 23, 1908.~~  
~~Length 77 mm.~~

~~16653 and 23365. Galera Bay, Mindoro.~~  
~~June 9, 1908. Length 37 to 74 mm. 3 examples.~~

~~7275. Migozo Point, Dinapundan Bay,~~  
~~Samar Island. July 28, 1909. Length 60 mm.~~



Equula splendens var. novemaculeatus  
Klunzinger, Sitzs. Ber. Akad. Wiss.  
Wien, Math.-naturw. Kl., vol. 80,  
pt. 1, p. 55, 1879 (type locality,  
Port Dennison, Queensland).

Leiognathus novemaculeatus  
Whitley, Mem. Queensland Mus.,  
vol. 10, pt. 2, p. 114, March 30, 1932  
(copied).



Subgenus Villago Cuvier Cuv 20<sup>7a</sup>  
Ventral spine normal, slender,  
bony.



Egnumula ovalis De Vis, Proc.  
Linn. Soc. New South Wales, vol. 9,  
pt. 3, p. 543, November 39, 1884  
(type locality, Cape York, Queensland).  
— Saville Kent, Rep. ~~Food~~ Fish.  
Queensland, p. 10, 1889; Great  
Barrier Reef, p. 369, 1893.

Leiognathus ovalis McCulloch and  
Whitley, Mem. Queensland Mus.,  
vol. 8, p. 145, 1925 (reference). —  
McCulloch, Austral. Mus. Mem.,  
no. 5, p. 213, 1929 (reference).

Eubleekeria ovalis Whitley, Mem.  
Queensland Mus., vol. 10, pt. 2, p. 109,  
March 30, 1932 (type; type of Egnumula  
simplex; off Gloucester Head;  
Bowen; Cape Bowling Green).



1899  
g.<sup>1</sup> Body immaculate; dorsal spotted  
between rays. bassensis.

g.<sup>2</sup> Body spotted; first dorsal ~~spotted~~  
brownish above, dotted below; second  
dorsal edged brown and with 2 longitudinal  
vittae; caudal with 3 transverse  
orange vittae. maculata.

c.<sup>2</sup> Cheek and interocular scales ctenoid.

h.<sup>1</sup> Scales 70 to 75 in lateral line;

3 rows above. japonica.

h.<sup>2</sup> Scales 82 to 86 in lateral line;

7 rows above. parvisquamis.

b.<sup>3</sup> Dorsal spines 2, rays 15 or 16 (rarely 18);  
first dorsal marbled blackish, second with  
4 or 5 rows of oblong spots. ciliata.

a.<sup>3</sup> Villaginopodus new subgenus. Ventral  
spine expanded as thick cartilaginous  
pad, joined with first ventral ray.

chondropus

(Can't name only)



Eggnula simplex De Vis, Proc.  
Linn. Soc. New South Wales, vol. 9,  
pt. 3, p. 544, November 29, 1884

(type locality, Cape York, Queensland).

— Laville Kent, Prelim. Rep. Food  
Fish Queensland, p. 10, 1889; Great  
Barrier Reef, p. 369, 1893 (reference).

Leiognathus simplex McCulloch and  
Whitley, Mem. Queensland Mus.,  
vol. 8, p. 145, 1925 (reference). —

McCulloch, Austral. Mus. Mem.,  
no. 5, p. 212, 1929 (reference).



however, appear to be supported by others, they perhaps can scarcely be regarded as generic, and the species distinguished have been therefore retained in the same genus. (Gill.)

Analysis of ~~the~~ species. 6 L. Hom (ds)

a. Sillago. Ventral spine normal, slender, bony.

b. Anal with 1 or 2 spines, rays 19 to 23.

c. Cheek and interocular scales cycloid.

d. Scales large, 50 to 55 along lateral line.

d.<sup>2</sup> Scales moderate, 70 to 75 along lateral line. macrolepis

e. Scales 4 above lateral line; dorsal rays 20 or 21, anal 22 or 23.

f.<sup>1</sup> Eye 4 to 5 in head. sikama

f.<sup>2</sup> Eye 7 in head. houtani

e.<sup>3</sup> Scales 5 or 6 above lateral line; dorsal rays 22, anal 19 or 21. could 3 rays only



Leiognathus philippinus Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. , p. 15, fig. 7, 1918 (type  
locality, Philippines); vol. 79,  
p. 273, 1927 (San Fernando, Orani,  
type and paratypes).



Analysis of the species

6/1/30  
Caly

a.<sup>1</sup> Body uniform.

b.<sup>1</sup> First dorsal with blackish tip, whitish horizontal medial band and another basally; caudal ends black and black band across upper lobe.

caeruleus.

b.<sup>2</sup> Dorsals uniform; hind caudal edge dusky, upper lobe with 3 to 5 gray cross bands. bensasi.

b.<sup>3</sup> Second dorsal with 5 horizontal yellow bands; upper caudal lobe with 4 or 5 yellow cross bars. sundaicus.

b.<sup>4</sup> Dorsals edged dusky; 6 dusky bars on each caudal lobe, lower more prominent. subvittatus.

a.<sup>2</sup> Body with varied markings.

c.<sup>1</sup> Head and body without black spots.

d.<sup>1</sup> Brown saddle over front half of caudal peduncle; 1 or 2 dark cross bands on sides; each caudal lobe with 6 or more oblique dark lines.

luzonius.

d.<sup>2</sup> Large triangular reddish blotch at caudal base; dorsals each with 3 brownish horizontal bands;



2243

Depth  $1\frac{3}{4}$  to  $2\frac{1}{10}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{2}$ ,  
width  $1\frac{4}{5}$  to  $1\frac{7}{8}$ . Snout 3 to  $3\frac{1}{5}$  in  
head; eye  $2\frac{4}{5}$  to 3, greater than  
snout or interorbital in young,  
subequal with age; maxillary  
reaches  $\frac{1}{5}$  in eye, expansion  
 $3\frac{1}{3}$  to 4 in eye, length  $2\frac{2}{5}$  to  $2\frac{9}{10}$ .  
in head; interorbital  $2\frac{2}{5}$  to 3,  
low, concave medially. Gill rakers  
8 + 22, lanceolate,  $\frac{1}{3}$  in eye,  
subequal with gill filaments.

Tubular scales 45 to 50 in  
lateral line to caudal base;  
12 scales above, 22 or 23 below.  
Normal scales entirely cover  
chest and caudal base. Lateral  
line complete, reaches caudal  
base medially, less curved than  
profile of back.



D. VIII, 16, I, second spine  $1\frac{1}{3}$  to  $1\frac{2}{5}$  in head, first ray 3 to  $3\frac{1}{5}$ ; A. III, 13, I or 14, I, second spine  $1\frac{1}{2}$  to  $1\frac{3}{4}$ , first ray  $2\frac{3}{5}$  to 3; caudal 1 to  $1\frac{1}{10}$ , well forked; least depth of caudal peduncle  $3\frac{1}{5}$  to  $4\frac{2}{5}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , rays II, 17; ventral rays I, 5, fin 2 to  $2\frac{1}{5}$ , axillary scale  $\frac{3}{4}$  of fin.

Back and upper surfaces pale gray or brown, former with indistinct or darker gray spots or bars, all more or less transverse. Snout with deep brown to blackish dots. Sides below and lower surfaces of body silvery white. Fins pale, except large conspicuous black blotch terminally over first



3 membranes of spinous dorsal.  
Dark gray line along bases  
of dorsal V. Pectoral axil blackish  
or deep brown.

Red Sea, Madagascar, Mauritius,  
India, Ceylon, Andamans, Malaya,  
East Indies, Philippines, <sup>Burma</sup> Siam,  
China, Formosa, Queensland,  
Polynesia.



20069. Backwater ponds, Putoc<sup>2246</sup>  
River, Mindanao. January 30, 1909.  
Length 90 mm.

20138. Bacoov, Luzon. June 15, 1908.  
Length 70 mm.

Four examples. Cebu Bay,  
Catanduanes Island, east coast of  
Luzon. June 9, 1909. Length 46 to 79 mm.

Eleven examples. D. 5461. Caringo  
Island (W.), N.  $12^{\circ}$  W., 4.9 miles (lat.  
 $13^{\circ}57'42''$  N., long.  $123^{\circ}06'42''$  E.), east  
coast of Luzon. In 11 fathoms. June  
14, 1909. Length 81 to 100 mm.

One example. Catbalogan, Samar.  
April 15, 1908. Length 72 mm.

One example. Cavite. Length 68 mm.  
"Lappap". "Yapot".

12081. Cavite market, December  
1, 1908. Length 48 mm.



Tubes of lateral line with 3 to 6 tubules. Scales with 5 or 6 basal radiating striae; 60 to 131 apical denticles, with 3 to 7 transverse series of basal elements; circuli fine.

D. VIII — I, 8, I, third spine  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in head, first branched ray  $2\frac{1}{4}$  to  $3\frac{1}{8}$ ; A. I, 6, I, first branched ray  $2\frac{1}{10}$  to  $2\frac{3}{4}$ ; caudal 1 to  $1\frac{1}{4}$ , deeply forked, slender lobes pointed; least depth of caudal peduncle  $2\frac{7}{8}$  to 3; pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ ; ventral  $1\frac{1}{8}$  to  $1\frac{1}{5}$ .

Generally pale brown. Upper surface or edge of head and back slightly darker — all along for about width of one scale. Dark or blackish brown band from upper side of snout to eye, then over postocular and along and finally close above lateral line till opposite soft dorsal origin.



1449, 1454, 1455. D. 5361. Corregidor  
 Light, S.  $89^{\circ}$  W., 7.2 miles (lat:  $14^{\circ}24'$   
 $15''$  N., long.  $120^{\circ}41'30''$  E.), Manila  
 Bay. In 12 fathoms. February 9, 1909.  
 Length 98 to 124 mm. Twelve examples.

7545. Cotabato, Mindanao River  
 below mouth of river, Mindanao.  
 May 20, 1908. Length 70 to 90 mm.  
 Twelve examples.

Three examples. Dagupan, Luzon.  
 March 18, 1908. Length 56 to 69 mm.

Two examples. Dagupan.  
 March 19, 1908. Length 53 to 70 mm.

22874. Davao, Mindanao.  
 May 16, 1908. Length 20 to 83 mm.  
 Fifteen examples.

11521, 20088, 23736. Dumaca  
 River, Luzon. February 25, 1909.  
 Length 72 to 91 mm.



Depth 3 to  $3\frac{1}{3}$ ; head  $2\frac{4}{5}$  to  $2\frac{7}{8}$ , width  $2\frac{1}{3}$  to  $2\frac{2}{5}$ . Snout  $1\frac{3}{4}$  to  $2\frac{1}{10}$  in head; eye  $4\frac{1}{2}$  to  $5\frac{2}{3}$ , 2 to  $3\frac{1}{4}$  in snout, 1 to  $1\frac{2}{3}$  in interorbital; maxillary reaches  $\frac{3}{5}$  to  $\frac{4}{5}$  to eye, expansion  $1\frac{1}{4}$  in eye in young to  $\frac{1}{4}$  greater than eye with age, length  $2\frac{2}{3}$  to 3 in head; barbels reach beyond eye to upper hind preopercle edge, length  $1\frac{1}{4}$  to  $1\frac{1}{3}$  in head; teeth about 36 above, 32 below, simple, conic, uniserial, none on palate; interorbital  $3\frac{3}{4}$  to 4, convex. Gill rakers 7+21, lanceolate,  $1\frac{1}{5}$  in gill filaments which  $1\frac{1}{4}$  in eye.

Scales 26 to 29 in lateral line to caudal base and 2 more on latter; 3 above, 5 to 7 below, 13 predorsal; 3 rows below eye to lower preopercle edge.



2248

19395. Iloilo market. March 28,  
1908. Length 84 mm.

Two examples. Iloilo River shore  
above. June 2, 1908. Length 27 to 42  
mm.

Forty six examples. Lingayen  
Gulf, west coast of Luzon. May 11,  
1909. Length 15 to 53 mm.

One example. Manila Bay.  
December 8, 1909. Length 45 mm.

Five examples. Manila Bay.  
December 9, 1909. Length 37 to 68 mm.

22356. Manila Harbor. January 4,  
1908. Length 51 mm.

Two examples. Manila Harbor.  
March 16, 1908. Length 30 to 35 mm.

One example. Manila market. December 10-18, 1909. Length 70 mm.

Two examples. Mantaguin Bay,  
Palawan. April 1, 1909. Length 38 to 52 mm.

One example. Mantaguin Bay.  
April 2, 1909. Length 35 mm.



Pampheneus barberinoides Bleeker,  
Nederland. Tijds. Dierk., vol. 1, 1863,  
p. 234 (name only); Verhandel. Kon.  
Akad. Wetensch. Amsterdam, vol. 15,  
no. 3, 1875, p. 22 (Celebes, Ternate,  
Amboina, Ceram); Atlas Ichth. Ind.  
Néerland., vol. 9, 1877, pl. (2) 392, fig. 5.  
Pseudopeneus barberinoides Kendall and  
Goldsbrough, Mem. Mus. Comp.  
Zool., vol. 26, 1911, p. 293 (Vavau, Tonga).  
Upeneus atrocingulatus (Kner) Steindachner,  
Sitz. Ber. Akad. Wiss. Wien, Math.-  
naturwiss. Klasse, vol. 61, 1870, p. 443.  
Vavay. <sup>1</sup>Schmeltz, Cat. Mus. Godeffroy,  
no. 4, 1869, p. 29 (Vavay); no. 6, 1877, p. 12  
(Vavao); no. 7, 1879, p. 40 (Tonga Islands).  
Upeneus trifasciatus (part) Günther,  
Journ. Mus. Godeffroy, vols. 1-3, pts. 5-6,  
1874, p. 59, pl. 44, fig. c.



2249

Four examples. North end of  
Endeavour Strait, north west coast  
of Palawan. December 22, 1908.

Length 34 to 55 mm.

5365. Oton, Iloilo. March 30, 1908.  
Length 84 mm.

Three examples. Pucot River,  
Mariveles. January 29, 1909. Length  
52 to 66 mm.

19518. Ragay River tidal. March 10,  
1909. Length 78 mm.

Sixteen examples. River at Pasacao,  
Luzon. March 9, 1909. Length 60 to 98 mm.

Two examples. Sangley Point, Cavite.  
March 23, 1908. Length 53 to 55 mm.

<sup>8775,</sup> 8784, <sup>8780,</sup> 8787, 8795 ~~8796~~ to 8798,  
8802, 8804, 21677, 21678, 21680.  
Santiago River, Pagapas Bay, Luzon.  
February 20, 1909. Length 31 to 106 mm.  
Fourteen examples.



Canal 129

Pseudupeneus barberinoides (Bleeker)

Upeneus barberinoides Bleeker, Natuurk.  
Tijdschr. Nederland. Indië, vol. 3,  
1852, p. 263. Wahai, Northern Ceram.  $\frac{1}{m}$   
Günther, Cat. Fishes Brit. Mus., vol. 1,  
1859, p. 406 (compiled).  $\frac{1}{2m}$  Kner, Reise  
Novara, Fische, 1865, p. 70, pl. 3, fig. 4  
(Hong Kong).  $\frac{1}{2m}$  Macleay, Proc. Linn. Soc.  
New South Wales, vol. 8, 1883, p. 264  
(Hood Bay, New Guinea).  $\frac{1}{m}$  Snyder,  
Proc. U.S. Nat. Mus., vol. 42, 1913, p. 501  
(Okinawa).  $\frac{1}{2m}$  Herre and Montalban,  
Philippine Journ. Sci., vol. 36, no. 1, May  
1928, p. 120, pl. 4, fig. 3 (Subic Bay,  
Puerto Galera, Calapan, Concepcion,  
Negros, Buenavista, Cebu, Zamboanga).  
 $\frac{1}{m}$  Fowler, Mem. Bishop Mus., vol. 6,  
1928, p. 229 (Yavau, Tonga).  $\frac{1}{m}$  J. Schmidt,  
Trans. Pac. Comm. Acad. Sci. USSR, vol. 1, 1930, p. 57  
(Kominato, Riu Kiu).



Eight examples. D. 5209.  
 Taratara Island (N.), S.  $53^{\circ}$  W.,  
 1.80 miles (lat.  $11^{\circ}45'25''$  N.,  
 long.  $124^{\circ}48'05''$  E.), off western  
 Samar. In 20 fathoms. April 14,  
 1908. Length 105 to 123 mm.

11827, 19347 to 19350. Sandakan  
 Bay, Borno, Dutch East Indies.  
 March 2, 1908. Length 58 to 84 mm.  
 Nineteen examples.

Two examples. Tifu Bay,  
 Boero Islands. December 10, 1909.  
 Length 80 to 85 mm.



28159 A. N. S. P. Honolulu.  
Bureau of Fisheries (03056).

28109 A. N. S. P. Honolulu.  
Bureau of Fisheries (03920).

28110 A. N. S. P. Honolulu.  
Bureau of Fisheries (03057).



U.S.N.M., no. 32724. Indian Archipelago. Royal Museum of Leiden. Length 128 mm. Dorsal without distinct black blotch, perhaps faded. As Leiognathus gomorah.

U.S.N.M., no. 51975. Negros. Dr. B. Dean. Length 56 to 120 mm. Three examples.

U.S.N.M., no. 56234, Mindanao. Bureau of Fisheries (4303). Length 83? mm.

U.S.N.M., no. 65896. Suva, Fiji. Albatross Collection (08826). Length 106 mm.

U.S.N.M., no. 72262. Cavite. R.C. McGregor. Length 69 to 73 mm. Three examples. Dorsal with black blotch. Breast scales normal.

U.S.N.M., no. 72269. Iloilo. R.C. McGregor. Length 59 mm. As Leiognathus enriferus.



14524  
dusted with dull <sup>spinous dorsal darkest.</sup> drab or dusky,  
Barbel and chin whitish. Pectoral  
pale brownish above, whitish below.  
Ventrals white.

Katal, India, Ceylon, East Indies.



U. S. N. M., no. 72648. Java.  
O. Bryant and W. Palmer. Length 81 mm.

U. S. N. M., no. 76610. Takao, Formosa.  
Dr. F. Baker. Length 71 to 80 mm.  
Three examples. As Leiognathus equula.  
Weber and Beaufort rightly say  
"This determination must be erroneous  
as the authors say that the scales  
entirely cover the"; they "describe  
also the black patch on spinous  
dorsal, characteristic for L. splendens".

U. S. N. M., no. 87988. Benkoelen,  
Sumatra, November 1925. Hunt: H. C.  
Kellers. Length 92 mm.

U. S. N. M., no. 89495. Rangoon,  
Burma. G. E. Gates. Length 38 mm.  
As Equula fasciata. Spinous dorsal  
with black blotch. Large scales on  
breast and chest.

U. S. N. M., three examples (with  
56332). Cavite. Dr. G. A. Ling.  
Length 38 to 84 mm. Black dorsal  
spot. Breast scales normal. As  
Leiognathus dussumieri.



depth  $3\frac{1}{3}$  to  $3\frac{2}{3}$ ; head  $3\frac{3}{5}$  to  $3\frac{2}{3}$ ,  
width  $1\frac{3}{5}$  to  $1\frac{4}{5}$ . Snout  $3\frac{1}{3}$  to  $3\frac{1}{2}$   
in head; eye  $4\frac{1}{2}$  to 5,  $1\frac{1}{2}$  in snout,  
 $1\frac{1}{4}$  in interorbital; maxillary reaches  
 $\frac{1}{2}$  to  $\frac{2}{3}$  in eye, expansion 2 in eye,  
length  $2\frac{1}{8}$  to  $2\frac{1}{2}$  in head; bands of  
fine teeth in jaws, in 4 or 5 irregular  
short mandibular barbel  $5\frac{1}{2}$  to 6 in eye;  
series, outer upper row scarcely enlarged;  
interorbital 3 to  $3\frac{5}{8}$  <sup>in head</sup> broadly convex.  
Gill rakers 5 + 7 or 8 short points,  
 $\frac{1}{3}$  to  $\frac{1}{2}$  of gill filaments, which  $\frac{1}{3}$  of  
eye.

Scales 43 to 45 in lateral line  
to caudal base and 18 to 20 more  
out over caudal medianly; 4 above,  
7 or 8 below, 26 or 27 predorsal.



A. N. S. P., two examples. Vigan.  
1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., three examples. Orani.  
1923. Rev. Joseph Clemens.  
Purchased.

A. N. S. P., four examples. Philippines.

A. N. S. P., three examples. Ceylon.  
Dr. F. Hallberg. 1925. Purchased.  
Length 41 to 51 mm.

A. N. S. P., no. 47486. Philippine  
Islands. Commercial Museum of  
Philadelphia. Length 65 mm.  
Type of Leiognathus philippinus.

A. N. S. P., nos. 47487 to 47490.  
Philippine Islands. Commercial  
Museum of Philadelphia. Length of  
63 to 68 mm. Paratypes of Leiognathus  
philippinus.



2254

Leiognathus dussumieri (Valenciennes)

Egula dussumieri Valenciennes,  
Hist. Nat. Poiss., vol. 10, p. 77, pl.  
283, 1835 (type locality, Coromandel).  
— Jerdon, Madras Journ. Lit.  
Sci., p. 138, 1851. — Günther,  
Cat. Fish. Brit. Mus., vol. 2, p. 500,  
1860 (Borneo) <sup>— Kner, Reise Novara, Fische, p. 166, 1865 (Tahiti).</sup>  
— Day, Fishes of <sup>Singapore;</sup> India, pt. 2, p. 239, pl. 52, fig. 2, 1876.  
— Günther, Rep. Voy. Challenger,  
vol. 1, pt. 6, p. 52, 1880 (Philippines).  
— Károlyi, Termész. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore).  
— Meyer, Anal. Soc. Espan. Hist.  
Nat. Madrid, vol. 14, p. 26, 1885  
(Cebu). — Gogorza, Anal. Soc. Espan.  
Hist. Nat. Madrid, vol. 17, p. 291,  
1888 (Manila Bay). — Day, Fauna  
British India, Fishes, vol. 2, p. 187,  
1889.



1007

Depth 5 to  $5\frac{1}{3}$ ; head  $3\frac{2}{5}$  to  $3\frac{1}{2}$ , width  $2\frac{1}{4}$  to  $2\frac{2}{5}$ . Snout  $2\frac{2}{5}$  to  $2\frac{1}{2}$  in head; eye 4 to  $4\frac{7}{8}$ ,  $1\frac{1}{2}$  to 2 in snout, greater than interorbital in young to  $1\frac{1}{8}$  with age; ~~teeth~~ maxillary reaches  $1\frac{3}{5}$  to  $1\frac{1}{4}$  in snout, expansion  $3\frac{1}{2}$  to 4 in eye, length  $4\frac{1}{4}$  to  $4\frac{1}{2}$  in head; teeth villiform, in bands in jaws and on vomer; interorbital  $4\frac{1}{3}$  to 5, nearly level; hind preopercle edge serrulate, lower edge entire. Gill rakers 3 + 9, lanceolate,  $\frac{1}{2}$  of gill filaments, which 2 in eye.

Scales 67 to 69 in lateral line to caudal base and about 20 more out over caudal basally; 5 above, 9 or 10 below, 29 or 30 predorsal extending little forward of nostrils; 5 rows on cheek to preopercle ridge, with single row of large scales on preopercle flange.



— Sauvage, Hist. Madagascar, Poiss.,  
p. 518, 1891 (reference). — Weber,  
Zool. Ergebn. Reise Ind. Ost-Indien,  
Heft 2, p. 409, 1894.

— Pellegrin, Bull. Soc. Zool. France,  
vol. 39, p. 225, 1914.



December 15, 1909. Length 21 to 31 mm.

23896 and 23897. Pendek Island.

December 15, 1909. Length 66 mm.

14342. Toba Island. December 14, 1909.

Length 79 mm.

23619. Tifu Bay, Bouru Island.

December 10, 1909. Length 60 mm.

23105 and 23106, 24079. Tomahu Island.

December 11, 1909. Length 48 to 72 mm.

23358 and 23359. Uki, Bouru Island.

December 9, 1909. Length 64 to 83 mm.

29 specimens. Basa Reef, Gulf of Boni, Celebes. December 17, 1909. Length 15 to 41 mm.

23394. Dodepo and Prejopo Islands, Gulf of Tomini, Celebes. November 16, 1909. Length 87 mm.

23115. Labuandata Bay, Gulf of Boni, Celebes. December 18, 1909. Length 53 mm.

23974. Limbe Strait, Celebes. November 11, 1909. Length 67 mm.



Equula dussumieri Bleeker,  
Verh. Batavia. Genoot. (Nat.  
Ichth. & Bengal), vol. 25, p. 46,  
1853 (reference).

Swainson, Nat. Hist. Animals, vol.  
2, p. 250, 1839 (on Cuvier).



~~1829~~  
Sillago erythraea Cuvier, Hist. nat. Poiss.,  
vol. 3, 1829, p. 409. Suez; Massana, Red Sea.  
<sup>1</sup>/<sub>2</sub> Guérin, Regne Animal, Cuvier, vol. 1, 1829-44,  
pl. 8, fig. 1.



Leiognathus dussumieri Smith and Seale, Proc. Biol. Soc. Washington, vol. 19, p. 2, 1906 (Mindanao); Seale and Bean, Proc. U. S. Nat. Mus., vol. 33, p. 242, 1907 (1908) (Zamboanga).

Bleeker, Rech. Faune Madagascar, pt. 4, p. 98, 1874 (reference).

— Regan, Ann. Mag. Nat. Hist. London, ser. 9, vol. 5, p. 420, 1920.

— Weber and Beaufort, ~~Fowler~~, Fishes Indo Austral. Archip., vol. 6, p. 326, (1931 fig. 67) (River Minoralang and Lake Sidenreng, Celebes).

— Fowler, Mem. Bishop Mus., vol. 10, p. 153, 1828 (note).



1679

Sillago ihama Fowler, Journ. Bombay  
Nat. Hist. Soc., vol. 33, No. 1, 1928, p. 116  
(Bombay). (misprint.)

Sciaena malabarica Schneider, Syst. Ichth.  
Bloch, 1801, p. 81, pl. 19. Tranquebar. ~~mm~~  
Sillago malabarica  
Cantor, Journ. Asiatic Soc. Bengal, vol. 18,  
pt. 2, 1849 ~~mm~~, p. 1003 (Pining,  
Singapore, Malay Peninsula). m Bleeker,  
Act. Soc. Sci. Ind. Néerland., no. 6, vol. 6,  
1859, p. 2 (Doreh, New Guinea). m Gill,  
Proc. Acad. Nat. Sci. Philadelphia, 1861, p.  
504 (compiled). m Pöhl, Cat. Mus. Godeffroy, no. 9, 1884,  
p. 32 (East Indies).  
Sillago acuta Cuvier, Règne Animal, vol. 2,  
1817, p. 258. Sea of the Indies; Hist. Nat.  
Poiss., vol. 3, 1829, p. 400 (Pondicherry, Calcutta,  
Malabar, Batavia). m Mason, Burmah Nat.  
Resources, 1860, p. 694. m Kner, Reise Novara,  
Fische, 1865, p. 128 (Ceylon; Madras). m Juan,  
Mém. Soc. Hist. Nat. Cherbourg, series 2, vol. 3, 1868,  
p. 252 (Hong Kong).



? Leiognathus ensiferus (not Valenciennes)  
Jordan and Richardson, Bull. Bur.  
Fishes., vol. 27, p. 252, 1907 (1908)  
(Manila; Cavite).



23847. Togian Bay, Togian Islands,  
Gulf of Amuni, Celebes. November 19, 1909.  
Length 68 mm.

14934, 14935, 23549, 24061. Talisse Island,  
north of Celebes. November 9, 1909. Length  
65 to 73 mm.

23613 and 23674. Gane Road, Gillolo  
Island. December 1, 1909. Length 64 to 69 mm.

23484. Kayoa Island. November 29, 1909.  
Length 80 mm.

23527 to 23530, <sup>23883, 23884</sup> Sidore Island, south of  
Ternate. November 25, 1909. Length 55 to  
108 mm.



2259

Depth  $1\frac{4}{5}$  to  $1\frac{5}{6}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{5}$ ,  
width  $1\frac{3}{4}$  to  $1\frac{4}{5}$ . Snout  $2\frac{4}{5}$  to 3  
in head; eye 3 to  $3\frac{1}{10}$ , subequal  
with snout or interorbital;  
maxillary reaches  $\frac{1}{8}$  in eye,  
expansion  $3\frac{1}{4}$  to 4 in eye,  
length  $2\frac{1}{3}$  to  $2\frac{2}{5}$  in head,  
interorbital 3 to  $3\frac{1}{5}$ , low, largely  
depressed or slightly concave.  
Gill rakers 6 + 21, equal gill  
filaments or  $3\frac{1}{2}$  in eye.

Scales 42 to 44 in lateral  
line, which less arched than  
dorsal profile of back, midway  
along side of caudal peduncle  
to caudal base; 10 scales above,  
23 or 24 below. Chest and breast  
fully scaled with large normal  
scales, like those on sides of  
body.



D. VIII, 16, I, second spine  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in head, first ray  $3\frac{2}{5}$  to  $3\frac{1}{2}$ ; A. III, 14, I, second spine  $1\frac{3}{5}$  to  $1\frac{2}{3}$ , first ray  $2\frac{4}{5}$  to 3; caudal 1, deeply forked; least depth of caudal peduncle 4 to  $4\frac{1}{8}$ ; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{6}$ , rays II, 16; ventral I, 5, fin 2 to  $2\frac{1}{4}$  in head, axillary scale  $\frac{2}{3}$  of fin.

Back grayish, sides and below silvery white. Iris pale or whitish. Snout dark brown. Pectoral axil not dark. Fins all pale, no black spot on spinous dorsal though fin sometimes brownish or grayish. Dark gray line along bases of dorsals.



2261

Madagascar, India, Andamans,  
Malaya, East Indies, Philippines,  
Polynesia. Marine, also entering  
fresh water rivers and lakes.

I have followed Weber and  
Beaufort in the acceptance of  
this species. According to Day  
it reaches 200 mm. He says

"Dark and narrow vertical  
lines pass from the back over  
the lateral line" and "Scales  
small and distinct, except on  
the breast and chest, which  
are scaleless."



2262  
U. S. N. M., no. 51978. Negros.  
Dr. B. Dean. Length 45 to 108 mm.  
Two examples. As Leiognathus leuciscus.

U. S. N. M., no. 56072.  
Philippines. Bureau of Fisheries  
(3955). Length 96 mm. As Leiognathus  
splendens.

U. S. N. M., no. 56108. San Fabian.  
Bureau of Fisheries (3956). Length 92  
mm. As Leiognathus edentula. Lower  
jaw deeply concave in profile which  
I think likely due to injury. Dorsal  
pale. Scales large and distinct on  
breast.

U. S. N. M., no. 72646. Batavia, Java.  
April 2, 1909. O. Bryant and W. Palmer.  
Length 108 mm. As Leiognathus splendens.

U. S. N. M., no. 72647. Batavia.  
O. Bryant and W. Palmer. Length 126 mm.  
As Leiognathus splendens.

U. S. N. M., no. 72649. Java. O. Bryant  
and W. Palmer. Length 118 to 132 mm.  
Five examples. As Leiognathus splendens.



1132  
Scales with 7 to 11 basal radiating  
striae; 31 to 65 short apical  
denticles, with 5 to 18 transverse  
series of basal elements; ciculi fine.  
D. X, I, 31, I, third spine 2 to  $2\frac{3}{5}$   
in head, third ray  $2\frac{1}{8}$  to  $2\frac{4}{5}$ ; A.  
II, 7, I, second spine  $2\frac{2}{5}$  to  $2\frac{7}{8}$ , second  
ray  $1\frac{3}{4}$  to 2; least depth of caudal  
peduncle 3 to  $3\frac{2}{3}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ;  
ventral  $1\frac{2}{5}$  to  $1\frac{2}{3}$ ; caudal 3 to  $4\frac{3}{4}$   
in <sup>rest of</sup> ~~combined head and~~ body.

Back drab brown, also sides, below  
and on under surfaces whitish with  
silvery white reflections. Iris pale  
yellowish white. Vertical fins



Leiognathus blochii (Cuvier)

Egumla blochii Cuvier, Hist. nat. Poiss., vol. 10, p. 84, 1835 (type locality, Malabar).

— Bleeker, Verh. Batavia. Genoot.

(Nat. Ichth. Bengal), vol. 25, p. 46, 1853 (reference). — <sup>Fishes of Malabar, p. 105, 1865.</sup> Day, Fishes

of India, pt. 2, p. 241, <sup>pl. 52, fig. 5</sup> 1876 (Bombay).  
Fauna of British India, <sup>Fishes</sup> vol. 2, p. 188, 1889.



1744

Calcutta India). <sup>1</sup>/<sub>m</sub> Day, Fishes of India,  
pt. 2, 1876, p. 264, pl. 58, fig. 3 (Calcutta).  
<sup>1</sup>/<sub>m</sub> Lloyd, Records Indian Mus., vol. 1, 1907,  
p. 228 (Akyab).  
Sillaginopsis domina Hill, Proc. Acad.  
Nat. Sci. Philadelphia, 1861, p. 505  
(compiled). <sup>1</sup>/<sub>m</sub> Fowler, Proc. Acad. Nat.  
Sci. Philadelphia, 1929 (1930), p. 654  
(East Indies).



Leiognathus blochii Seale, Philippine  
Journ. Sci., vol. 5, p. 273, 1910

(Hong Kong). — Chaudhuri,  
Mem. Indian Mus., vol. 5, p. 732,  
1923 (Chilka Lake).

— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, p. 73, <sup>fig. 7 (young)</sup> 1934  
(Den Pasar and Sanoer, Bali),  
p. 151 (Bangkok and Sriracha, Siam).



rays 25 to 27.  
in front, Anal shorter than soft dorsal,  
rays 26 or 27. Caudal emarginate.  
Ventral with slender spine.

One species.

<sup>1879</sup> Villaginopsis panijus (Buchanan-Hamilton)

Cheilodipterus panijus Buchanan-Hamilton,  
Fishes of Ganges, 1822, pp. 57, 367. Ganges  
estuaries.

Sillago panijus Day, Fishes of India, pt. 2,  
1876, p. 315 (footnote).

Sillago domina Cuvier, Hist. Nat. Poiss., vol.  
3, 1829, p. 415, pl. 69, Pondichery. <sup>1</sup> Valenciennes,  
Règne Animal Cuvier, Ed. Ill., Poiss., 1839,  
pl. 13, fig. 1. <sup>2</sup> Swainson, Natural Hist.  
Animals, vol. 2, 1839, p. 205. <sup>1</sup> Cantor,  
Journ. Asiatic Soc. Bengal, vol. 18, pt. 2,  
1849 (1850), p. 1003 (reference). —

Günther, Cat. Fishes Brit. Mus., vol. 2, 1861,  
p. 246 (Ganges at Calcutta, Bengal Bay).



Leiognathus blocki Weber and Beaufort,  
Fishes Indo Austral. Archip.,  
 vol. 6, p. 328, 1931 (copied; Indian  
 specimen of Day). — Fowler and  
Bean, Proc. U. S. Nat. Mus., vol. 71,  
 art. 10, p. 5, 1927 (Benkoelen). —

Zeus notatus (Bloch) Cuvier, Hist.  
Nat. Poiss., vol. 10, p. 84, 1835  
 (name in synonymy).

Leiognathus spilotus Fowler, Journ.  
Nat. Sci. Philadelphia,  
 ser. 2, vol. 12, p. 516, pl. 14, lower  
 figure to right, 1904 (type locality,  
 Padang, Sumatra) (young).



Eme 130

1742

Genus Sillaginopsis Gill

Sillaginopsis Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 505. Type Sillago domina Cuvier = Cheilodipterus pangius Buchanan-Hamilton, orthotypic.

Sillaginichthys Bleeker, Verhandl. Akad. Wetensch. Amsterdam, vol. 14, 1874, p. 63 (name in synonymy). Type Sillago domina Cuvier.

Body elongated, partly cylindrical. Head elongated, depressed, upper profile nearly straight, gradually narrows forward in width. Eyes very small, in front half of head. Mouth small, lower jaw shorter than upper. Teeth villiform, larger in outer row anteriorly. Pyloric coeca 4. Scales small, about 90 in lateral line. Second dorsal spine very elongate, spines 9, origin of fin over pectorals; soft dorsal long, higher



Depth  $2\frac{1}{6}$  to  $2\frac{2}{5}$ ; head  $2\frac{3}{5}$  to  $3\frac{1}{10}$ , width 2 to  $2\frac{2}{3}$ . Snout 3 to  $3\frac{1}{2}$  in head; eye  $2\frac{3}{5}$  to 3, equals snout or interorbital; maxillary reaches  $\frac{1}{4}$  in eye in young, to front eye edge with age, expansion 3 in eye, length  $2\frac{3}{5}$  to  $2\frac{3}{4}$  in head; lower profile of mandible nearly straight; interorbital  $3\frac{1}{5}$  to  $3\frac{1}{3}$ , low, with slight median keel. Gill rakers 5 + 15, lanceolate,  $\frac{1}{2}$  of gill filaments, which 2 in head.

Scales very caducous, most all fallen. Traces of scales apparent on chest and breast. Lateral line less arched than dorsal profile of body, distinct only till below last dorsal rays.

D. VIII, 16, second spine  $1\frac{2}{5}$  to



$1\frac{2}{3}$  in head, first branched ray 4;  
A. III, 14, I, second spine  $2\frac{1}{6}$ ,  
 first branched ray  $2\frac{3}{4}$ ; caudal  
 $1\frac{1}{8}$  to  $1\frac{1}{4}$ , forked, lobes rather  
 broad, pointed; least depth of  
 caudal peduncle 4 to 5; pectoral  
 $1\frac{1}{3}$  to  $1\frac{1}{2}$ , rays II, 16; ventral  
 rays I, 5, fin 2 to  $2\frac{1}{2}$ ? in head,  
 axillary scale 3 in fin.

Back gray or drab down till  
 level with eye, lower half silvery  
 white. Iris and sides of head  
 silvery white. Dark brown saddle  
 on predorsal at ~~nuchal~~ occipital  
 spine terminally. Fins largely  
 pale gray, lower ones whitish  
 and yellowish tinge at caudal  
 base. Large jet black blotch  
 on second to fifth membranes of



spinous dorsal terminally, very  
contrasted and conspicuous.

Dark gray line along bases of  
dorsals.

<sup>Mauritius,</sup>

India, East Indies, Philippines.



3255 to 3258, 4069 to 4073.

D. 5360. Corregidor Light, N.  
 $74^{\circ}$  W., 6.9 miles (lat.  $14^{\circ}21'N$ , long.  
 $120^{\circ}41'E$ ), Manila Bay. In 12  
 fathoms. February 7, 1909. Length  
 77 to 103 mm.

One example. Malampaya River,  
 Palawan, December 26, 1908. Length  
 35 mm.

19896. Manila harbor, Luzon.  
 December 30, 1907. Length 65 mm.

22007, 22008. Mariveles Bay.  
 January 27, 1909. Length 65 to 69 mm.

One example. Port Janelo, Luzon.  
 July 13, 1908. Length 22 mm.

11733. Sandakan Bay, Borneo.  
 March 2, 1908. Length 95 mm.



1123

$2\frac{3}{5}$  to  $2\frac{4}{5}$  in head; barbel  $1\frac{2}{5}$  to  $2\frac{1}{4}$ ; teeth uniserial in jaws, none on vomer or palatines; interorbital  $3\frac{1}{8}$  to  $3\frac{1}{2}$ , level; preopercle edge entire. Gill rakers  $6 + 19$ , lanceolate, equal gill filaments, which  $1\frac{3}{4}$  in eye.

Scales 25 in lateral line to caudal base and 4 more on latter; 2 above, 6 below, 3 rows on cheek with margin of flange naked, 15 predorsal forward opposite front nostril. Scales with 3 to 6 basal radiating striae; 38 or 39 apical denticles, biserial; circuli very fine.

D. VIII — I, 8, II, second spine  $1\frac{1}{2}$  to 2 in head, first ray  $2\frac{1}{5}$  to  $2\frac{1}{4}$ ; A. I, 6, II, first branched ray  $2\frac{1}{3}$  to  $2\frac{2}{5}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , deeply forked, lobes pointed; least depth of caudal peduncle  $3\frac{1}{10}$  to  $3\frac{1}{5}$ ; pectoral  $1\frac{1}{3}$  to



U. S. N. M., No. 12636. Mauritius.  
British Museum. Length 95 to 122  
mm. Two examples, very poorly  
preserved. Depth  $2\frac{1}{4}$  to  $2\frac{2}{5}$ . Chest  
and breast scaled. Dorsal  
apparently faded, so no black  
blotch now evident, if ever  
present.

U. S. N. M., No. 87987. Benkoelen,  
Sumatra. November 1925. Lieut.  
H. C. Kellers. Length 74 mm.

A. N. S. P., No. 27,529. Padang,  
Sumatra. A. C. Harrison and H. L.  
Hiller. Length 32 mm. Type of  
Leiognathus spilotes.



Leiognathus brevirostris (Valenciennes)

Egnum brevirostris Valenciennes,  
Hist. Nat. Poiss., vol. 10, p. 83, 1835  
(type locality, Malabar). — Day,  
Fishes of India, pt. 2, p. 241, 1876;  
Fauna British India, ~~as~~ Fishes,  
vol. 2, p. 190, 1889.

Leiognathus brevirostris Weber and  
Beaufort, Fishes Indo-Austral.  
Archip., vol. 6, p. 330, 1931 (Kota  
Baru and Balikpapan Bay, Borneo).



195

23142. Port Natalvi, Luzon. November  
~~23~~, 1908. Length 68 mm.

8873. Port Natalvi. November 23, 1908.  
Length 49 mm.

<sup>and 23273.</sup>  
23272, Port Palapag. June 2, 1909.  
Length 65<sup>to 67</sup> mm.

15337, 15339, 23362 to 23364. Port Palapag.  
June 3, 1909. Length 62 to 84 mm. 12 examples.

23776 to 23779. Port Usan, west of Pinas  
Island. December 17, 1908. Length 61 to 73 mm.  
Iridescent silvery pink. Top of head and  
3 saddles across back blackish olive,  
one saddle below each dorsal and one  
on hind part of caudal peduncle, last  
darkest. Triangular bronze blotch  
below eye, pointing obliquely across  
cheek. Opercle bronze, with 2 broken  
silvery vertical bars. Similar  
indistinct bars on side of body,  
about 10 between head and axil of



Depth  $2\frac{2}{3}$  in body with caudal;  
 head  $4\frac{1}{3}$ . Snout pointed, only tip  
 obtuse,  $1\frac{1}{2}$  in eye; eye  $2\frac{3}{4}$  in head,  
 greater than snout, 1 in interorbital;  
 maxillary reaches first third of  
 eye; teeth uniserial in each jaw;  
 lower jaw very concave inferiorly;  
 lower limb of preopercle finely  
 serrate; pair of well developed  
 spines at front upper angle of  
 eye; supraorbital edge finely  
 serrate.

Scales extend over body,  
 breast and chest naked. Lateral  
 line with 58 to 64 distinct tubes,  
 not quite reaching caudal base.

D. VIII, 16, spines moderately  
 strong, compressed, second  $\frac{1}{3}$  to  $\frac{14}{9}$   
 body depth; A. III, 14, second spine  
 $\frac{2}{5}$  of body depth, third strongly  
 serrate in lower half; caudal forked;



pectoral rays 18, fin long as head  
without snout; ventral rays  
I, 5, reaches  $\frac{2}{3}$  to anal.

narrow yellow band from  
above eye to middle of caudal  
base. Oval black blotch on  
upper half of spinous dorsal,  
from third to seventh spines,  
sometimes very faint. Dark brown  
transverse blotch across nape of  
neck. Pectoral black posteriorly  
at base. Length 112 mm. (Day.)

India, China.



One example. Sandakan Bay,  
Borneo. March 2, 1908. Length 69  
mm. depth  $2\frac{1}{4}$ . Breast naked.



710

Upeneus pleurospilus Jordan and Snyder,  
Annotat. Zool. Japon., vol. 3, 1901, p. 84  
(Nagasaki).

Parupeneus pleurospilos Bleeker, Verhandel.  
Kon. Akad. Wetensch. Amsterdam, vol.  
15, no. 3, 1875, p. 31 (Bali, Amboina,  
Saparua); Atlas Ichth. Ind. Néerland.,  
vol. 9, 1877, pl. (1) 191, fig. 5.

Pseudupeneus pleurospilos Snyder,  
Proc. U. S. Nat. Mus., vol. 32, 1907, p. 96  
(compiled).

Parupeneus luteus (not Bleeker)  
Klunzinger, <sup>us</sup> Fische Roth. Meer., 1884,  
p. 52 (part).

Depth  $3\frac{2}{3}$  to 4; head 3 to  $3\frac{1}{8}$ , width  
 $2\frac{1}{4}$  to  $2\frac{1}{2}$ . Snout  $2\frac{2}{3}$  to 3 in head;  
eye  $3\frac{1}{2}$  to  $3\frac{3}{5}$ ,  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in snout,  
greater than interorbital in young;  
maxillary reaches to or  $\frac{1}{5}$  in eye,  
expansion  $1\frac{3}{4}$  to  $1\frac{4}{5}$  in eye, length



2275  
Leiognathus argentatus (Houttuyn)

Centrogaster argentatus Houttuyn,  
Verh. Holland. Maats. Wet.

Haarlem, vol. 20, pt. 2, p. 334, 1782

(type locality, Japan). —

Gmelin, Syst. Nat. Linn., p. 1337,

1788 (copied). — Lacépède, Hist.

Nat. Poiss., vol. 3, pp. 306, 307,

1802 (copied).



— Snyder, Proc. Acad. Nat. Sci. Philadelphia,  
1929 (1930), p. 611 (Hong Kong).

Villago burrus Richardson, Ann. Mag. Nat.  
Hist. London, vol. 9, 1842, p. 128. North-

West coast of Australia. — Castelnau, Proc. Linn.  
Soc. New South Wales, vol. 2, 1877, p. 232 (note).

~~Villago terracina reginalis Castelnau, Proc. Linn.  
Soc. New South Wales, vol. 2, 1877, p. 232.~~

~~Brisbane, Moreton Bay, Queensland.~~

Villago acotus Jordan and Evermann, Proc.  
U. S. Nat. Mus., vol. 25, 1903, p. 360, fig. 24.

Keerun, Formosa. <sup>1</sup><sub>m</sub> Jordan and Richardson,  
Mem. Carnegie Mus., vol. 4, no. 4, August  
28, 1909, p. 172, fig. 15 (copied).

Villago macrolepis (not Bleeker) Evermann  
and Seale, Bull. Bur. Fisher., vol. 26,  
1906, p. 187 (Bulan).

{ Villago gracilis Ailleyne and Macleay, Proc.  
Linn. Soc. New South Wales, vol. 1, 1875, p.  
279, pl. 6, fig. 2. Either at Carnley Island  
or Hall Sound.



Leiognathus argentatus Jordan  
and Snyder, Proc. U. S. Nat.  
Mus., vol. 23, p. 747, 1901  
(reference). — Jordan, Yanaka  
Snyder, Journ. College Sci.  
Tokio, vol. 33, p. 131, 1913 (reference).



vol. 3, 1878, p. 380 (Port Jackson).  $\frac{1}{m}$   
Klunzinger, Sitz. Ber. Akad. Wiss. Wien,  
math.-naturw. Klasse, vol. 80, pt. 1, 1879,  
p. 369 (Endeavour River).  $\frac{1}{m}$  Karoli, Termesz.  
Füzetek, Budapest, vol. 5, 1881, p. 162  
(Cantor).  $\frac{1}{m}$  Elera, Cat. Fauna Filipinas,  
vol. 1, 1895, p. 500 (compiled).  $\frac{1}{m}$  Ogilby,  
Handbook of Sydney, 1898, p. 133.  $\frac{1}{m}$  Waite,  
Sea Fisher. Rep. Thetis, 1898, p. 30 (Shoalhaven  
to Manning River, New South Wales, 16 to 84  
fathoms).  $\frac{1}{m}$  Pellegrin, Bull. Soc. Zool. France,  
vol. 30, 1905, p. 83 (Baie d'Ulong, Tonkin).  
~~at St. George, Fishes of Australia, 1906, p. 109, fig. 41 (New South Wales, Fremantle, West Australia).~~  
 $\frac{1}{m}$  Weber, Siboga Exped., vol. 57, 1913, p. 267  
 $\frac{1}{m}$  Fische,  
(Makassar).  $\frac{1}{m}$  Seale, Philippine Journ. Sci.,  
vol. 9, no. 1, 1914, p. 69 (Hong Kong).  $\frac{1}{m}$  Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 248  
(Delagoa Bay).  $\frac{1}{m}$  McCulloch, Fishes New  
South Wales, ed. 2, 1927, p. 51, pl. 21 fig. 184 b.  
 $\frac{1}{m}$  Tirant, Service Océanogr. Pêch. Indo  
Chine, 1929, (note 6°) p. (10) 18 (169) (Hué River).



Leiognathus argenteus Snyder,  
Proc. U. S. Nat. Mus., vol. 42,  
p. 412, 1912 (Suruga).



Case 129

1709a

Sillago maculata Quoy and Gaimard  
Sillago maculata Quoy and Gaimard, Voyage  
Uranie, Zool., 1824, p. 261, pl. 53, fig. 2.  
Sydney; Port Jackson.  $\frac{1}{2}$  Cuvier, Hist. nat.  
Poiss., vol. 3, 1829, p. 411 (Port Jackson).  $\frac{1}{2}$   
Günther, Cat. Fishes Brit. Mus., vol. 2,  
1860, p. 245 (Sydney).  $\frac{1}{2}$  Kner, Reise Novara,  
Fische, 1865, p. 127 (Java; Manila).  $\frac{1}{2}$   
Steindachner, Sitz. Ber. Akad. Wiss. Wien,  
math.-naturw. Klasse, vol. 53, pt. 1, 1866,  
p. 444 (Port Jackson); vol. 60, pt. 1, 1870,  
p. 562 (Singapore).  $\frac{1}{2}$  Castelnau, Proc. Zool.  
Acclimatiz. Soc. Victoria, vol. 1, 1872, p. 74  
(Victoria).  $\frac{1}{2}$  Bleeker, Verhandl. Akad.  
Wetensch. Amsterdam, vol. 14, 1874, p. 71  
(Singapore, Bintang, Lepur, Java, Celebes,  
Philippines).  $\frac{1}{2}$  Alleyne and Macleay, Proc.  
Linn. Soc. New South Wales, vol. 1, 1876, p.  
279 (No. 4 Island, Howick Group).  $\frac{1}{2}$   
Castelnau, Proc. Linn. Soc. New South Wales,



Leiognathus argenteum Snyder,  
Proc. U. S. Nat. Mus., vol. 42, p. 412,  
1912 (Suruga).

Leiognathus argenteum Jordan,  
Tanaka, Snyder, Journ. College Sci.  
Tokio, vol. 33, p. 131, 1913 (reference).  
— Izumi and Matsuura, Cat. Zool.  
Spec. Mus. Tokyo, Vert., p. 157,  
1920 (Boshu).



Depth  $4\frac{7}{8}$ ; head  $3\frac{1}{5}$ , width  $2\frac{1}{10}$ .  
Snout  $2\frac{3}{5}$  in head; eye  $4\frac{3}{5}$ ,  $1\frac{4}{5}$  in  
snout,  $1\frac{1}{5}$  in interorbital; maxillary  
reaches  $1\frac{3}{4}$  in snout, 4 in head; teeth  
villiform, on broad bands in jaws and  
on vomer; interorbital  $4\frac{1}{8}$ , slightly  
elevated and largely broadly convex;  
preopercle edge weakly and minutely  
denticulate. Gill rakers  $4+12$ , lanceolate,  
 $1\frac{2}{3}$  in gill filaments or  $2\frac{3}{4}$  in eye.

Scales 64 in lateral line to caudal  
base and 8 more on latter; 5 above, 10  
below, 29 predorsal forward half way  
in antero-prenasal region of snout;  
4 rows on cheek below eye to preopercle  
ridge; caudal base finely scaly and



Leiognathus argentatus Jordan  
and Metz, Mem. Carnegie Mus., vol.  
6, no. 10, p. 29, June 1913 (Fusan)

Leiognathus argentea Jordan and  
Thompson, Mem. Carnegie Mus.,  
vol. 6, no. 4, p. 241, Sep. 1914 (Osaka;  
Misaki).



~~13~~  
~~13~~

Sillago robusta Stead <sup>13</sup> known

<sup>13</sup>  
✓ New Fisher of New South Wales, 1908, p. 7, pl. 2. New South Wales. <sup>1</sup> Mc Culloch, Zool. Result Endeavour, vol. 1, pt. 1, Dec. 22, <sup>2</sup> 1911, p. 60 (reference in text); Fisher New South Wales, ed. 2, 1927, p. 51.

only from the unique holotype about 150 mm. long is said to differ from Sillago bassensis in having its ventrals inserted below the origin of the first dorsal, whereas in Sillago bassensis the ventrals are inserted in advance of the first dorsal.



Egumla muchalis Schlegel, Fauna  
Japonica, Poiss., pt. 7-9, p. 126, pl.  
67, fig. 1, 1845 (type locality,  
Nagasaki Bay).

— Richardson, Ichth. China and  
Japan, p. 276, 1846 (Canton). —  
Bleeker, Verh. Batavia. Genoot.  
Sch. Ichth. Japan, vol. 25, p. (15)  
38, 1853 (Nagasaki); ~~Ichth. Japan~~ (hal.  
Ichth. Japan), vol. 26, p. 5, 1857  
(Nagasaki); Act. Soc. Sci. Ind.  
Nedl., vol. 3, no. 3, p. 6, 1857-58  
(Japan). — Günther, Cat. Fish. Brit.  
Mus., vol. 2, p. 500, 1860 (China;  
Rep. Voy. Challenger, vol. 1, pt. 6, p. 66, 1889 (Yokohama).  
Amoy). — De Vis, Proc. Linn. Soc.  
Nedl. Ind. Archipel., vol. 5, p. 16, 1881 (Canton; Nagasaki;  
Yokohama). — Károlyi, Magyar. Füzetek, Budapest, vol. 5, p. 16, 1881 (Canton; Nagasaki;  
Yokohama). — Lawley, New South Wales, vol. 1, p. 545, 1884  
(Cape York). — Lawley Kent,  
Prelim. Rep. Food Fish. Queensland,  
p. 10, 1889; Great Barrier Reef,  
p. 369, 1893.  
— Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876  
(Nagasaki; Manila). — Günther,



Castelnau, Proc. Zool. Acclimatiz. Soc.  
Victoria, vol. 1, 1872, p. 94 (Melbourne).  
<sup>1</sup>/<sub>2</sub> Day, Fishes of India, pt. 2, 1876, p.  
265.

Sillago ciliata (not Cuvier) Johnston,  
Proc. Roy. Soc. Tasmania, 1883, pp. 80,  
116.

[ — Johnston, Proc. Roy. Soc. Tasmania, 1883,  
p. 116. — Lucas, Proc. Roy. Soc. Tasmania,  
new ser., vol. 2, 1890, p. 26 (copied). —  
Waite, Mem. Australian Mus., vol. 4,  
1890, p. 109.



Leiognathus nuchalis Bleeker, Ned.  
Tijds. Dierk., vol. 4, p. 132, 1873 (1874)  
(reference);

Verh. Kon. Akad. Wet. Amsterdam,  
vol. 18, p. 16, 1879 (reference).

— McCulloch and Whitley, Mem.  
Queensland Mus., vol. 8, p. 145, 1925  
(reference). — Jordan and Hubbs,  
Mem. Carnegie Mus., vol. 10, no. 2,  
p. 225, June 27, 1925 (Wakamoura; Kobe;  
Yatohku; <sup>Y</sup>Yoyama; Misaki; Koo).  
Mikawa Bay; Tokyo; Shizuoka; Toba; Kachi; Fukuoka; Fukuji).

— McCulloch, Austral. Mus. Mem.,  
no. 5, p. 213, <sup>Sept. 10,</sup> 1929 (reference).



Canal 29

7104

Villago bassensis Cuvier

Villago bassensis Cuvier, Hist. Nat. Poiss.,  
vol. 3, 1829, p. 412. Port Western, Bass  
Strait, Australia. <sup>1</sup>/<sub>m</sub> Quoy and Gaimard,  
Voyage Astrolabe, Zool., vol. 3, 1834, p. 672,  
pl. 1, fig. 2. ~~Another Cat. Fishes Brit. Mus., vol. 2, 1860, p. 245~~  
(Port Western). <sup>1</sup>/<sub>m</sub> Gill,  
Proc. Acad. Nat. Sci. Philadelphia, 1861, p.  
504 (compiled). <sup>1</sup>/<sub>m</sub> ~~Butterman, Proc. Linn. Soc.  
New South Wales, vol. 3, 1876, p. 380~~  
~~Another Cat. Fishes Brit. Mus., vol. 2, 1860, p. 245~~  
<sup>1</sup>/<sub>m</sub> ~~Wootton, Proc. Roy. Soc.  
Queensland, vol. 11, 1905, p. 175 (Moreton  
Bay)~~. <sup>1</sup>/<sub>m</sub> Stead, Fishes of Australia, 1906, p.  
111 (New South Wales; Tasmania). <sup>1</sup>/<sub>m</sub> McCulloch,  
Cat. Fishes New South Wales, vol. 1, pt. 7, 1919, p.  
51, pl. 21, fig. 184 d. <sup>1</sup>/<sub>m</sub> Waite, Records South  
Australian Mus., vol. 2, no. 1 April 23, 1913,  
p. , fig. 153. <sup>1</sup>/<sub>m</sub> McCulloch, Fishes of New  
South Wales, ed. 2, 1927, p. 51, pl. 21, fig. 184 d.  
Villago maculata (part) <sup>1</sup>/<sub>m</sub> ~~Wüther, Cat. Fishes  
Brit. Mus., vol. 2, 1860, p. 245 (Sydney)~~. —



Leiognathus muchale Jordan and  
Snyder, Annot. Zool. Soc. Japon.,  
vol. 3, p. 68, 1901 (reference).

Eubleekeria (Muehgenula) muchalis  
Whitley, Mem. Queensland Mus., vol.  
10, pt. 2, p. 111, March 30, 1932 (Japan;  
Cape York; Bundaberg, Queensland).



1407

Scales with 8 basal radiating striae; 33 to 53 short apical denticles, with 4 transverse series of basal elements; circuli fine.

D. XI or XII — I, II, 20, I or II, 21, I, second spine  $1\frac{1}{2}$  to  $1\frac{3}{5}$  in head, first branched ray  $1\frac{1}{3}$  to  $1\frac{2}{3}$ ; A. II, 21, I or II, 22, I, first branched ray 3 to  $3\frac{1}{3}$ ; caudal  $1\frac{1}{2}$  to  $1\frac{3}{4}$ ; least depth of caudal peduncle 4 to  $4\frac{1}{8}$ ; pectoral 2 to  $2\frac{1}{8}$ ; ventral  $1\frac{3}{4}$  to  $1\frac{7}{8}$ .

Pale or light brown on back, with indistinct, <sup>darken</sup> longitudinal bands formed in scale junctures. Under half of body whitish, in life translucent. Along middle of side of tail in alcoholic specimens often axial gray streak or band. ~~faint on tail~~ Iris whitish, dusky above. Fins all pale, dorsal and caudal dusted with dusky terminally.



Depth  $2\frac{1}{10}$  to  $2\frac{1}{5}$ ; head  $3\frac{2}{5}$  to  $3\frac{1}{2}$ , width  $1\frac{3}{4}$  to 2. Snout 3 to  $3\frac{1}{8}$  in head; eye 3 to  $3\frac{1}{2}$ , 1 to  $1\frac{1}{8}$  in snout, 1 to  $1\frac{1}{4}$  in interorbital; maxillary reaches eye, expansion  $3\frac{1}{5}$  to  $3\frac{3}{4}$  in eye, length  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in head; interorbital 3 to  $3\frac{1}{8}$ , low, with low median keel. Gill rakers  $5+20$ , lanceolate,  $1\frac{1}{2}$  in gill filaments, which  $1\frac{3}{5}$  in eye. Tubular scales 50 or 51 in lateral line to caudal base, ends median on latter. Predorsal region to dorsal fin above lateral line, and breast and chest to pectoral base, also anal fin, naked.

D. VIII, 15, I, second spine  $1\frac{2}{3}$  to  $1\frac{4}{5}$  in head, first ray  $3\frac{1}{10}$  to  $3\frac{3}{4}$ ; A. III, 14, I, second spine  $1\frac{7}{8}$  to 2;



caudal 1 to  $1\frac{4}{5}$ , forked, lobes pointed; least depth of caudal peduncle  $4\frac{1}{4}$  to  $4\frac{2}{3}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , rays  $\underline{\text{II}}$ , 15; ventral rays  $\underline{\text{I}}$ , 5, fin  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in head; axillary scale  $\frac{3}{5}$  of fin.

Pale brown above or on upper half of body, lower half silvery white. Blackish saddle on predorsal at occipital spine. Snout and above upper lip dark brown. Iris pale. Fins pale, with black blotch at summit of spinous dorsal. Axil of pectoral dark gray.

China, Japan, Queensland. Apparently closely related to Leiognathus blotchi and L. brevicrostris in the continuous lateral line. It differs, however,



from either in the naked area  
of the predorsal as well as the  
chest, breast and belly also  
naked.



U. S. N. M., no. 59622. Kochi, <sup>(2286)</sup>  
Japan. Dr. H. M. Smith. May 7, 1903.  
Length 56 to 71 mm. Two examples.

U. S. N. M., no. 59623. Hirogi,  
Kochi. Dr. H. M. Smith. May 7, 1903.  
Length 81 mm.

U. S. N. M., no. 71223. Shimizu,  
Suruga. Bureau of Fisheries.  
Length 75 to 111 mm. Four examples.

U. S. N. M., no. 75940. Japan?  
P. L. Jouey. Length 66 to 103 mm.  
Five examples (one 2358). As  
Leiognathus argenteum.

U. S. N. M., no. 87068. Foochow.  
A. Sowerby. Length 46 to 55 mm.  
Seven examples. As Egula nuchalis.

U. S. N. M., no. 87074. Foochow.  
A. Sowerby. Length 45 to 58 mm.  
Eleven examples. As Egula nuchalis.



4703a

Sillago bostockii 'Castelnau' as

'Proc. Zool. Acclimatiz. Soc. Victoria,  
vol. 2, 1873, p. 133. Freemantle, Western  
Australia.

as interpreted by McCulloch<sup>2</sup> is very

<sup>2</sup> Zool. Results Endeavour, vol. 1, pt. 1, Dec.  
22, 1911, pp. 60, 61 (Freemantle).

close to, if not the same as Sillago  
boutani. For comparison it may be  
noted he gives: Scales in lateral line  
69 to 74; D. XI, 21 or 22; A. 19 to 21, no  
black mark on pectoral base.



Leiognathus smithursti (Ramsay and Ogilby).

Egula smithursti Ramsay and Ogilby,  
Proc. Linn. Soc. New South Wales, Ser.  
2, vol. 1, p. 11, 1886 (type locality,  
Hood Lagoon, New Guinea).



$1\frac{2}{5}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ .

Brown on body and head above, lower sides and under surface white. At seventh or eighth scale below and along lateral line dusky spot of 1 or 2 scales in extent. Iris silvery white. Two indistinct whitish or pale lines along side of snout to eye. Number of scales on back and sides each show whitish blotch or spot, 1 to each scale. Fins all pale or colorless, membranes of spinous dorsal dusky marginally, also dusky band across middle of soft dorsal.

Red Sea, East Indies, Philippines, Riu Kiu, Japan. Herre and Montalban give a figure differing a little from Bleeker's in that there are 4 rows of cheek scales, maxillary scaleless, the dark lateral spot 6 scales from



Leiognathus smithursti Jordan  
and Seale, Bull. Bur. Fisher.,  
vol. 25, p. 273, 1905 (1906) (reference).  
— Jordan and Dickerson, Proc.  
U. S. Nat. Mus., vol. 34, p. 610,  
1908 (Suva). — Fowler, Mem.  
Bishop Mus., vol. 10, p. 153, 1928  
(copied). — Weber and Beaufort,  
Fishes Indo Austral. Archip.,  
vol. 6, p. 331, 1931 (copied). —  
Fowler, Mem. Bishop Mus., vol.  
11, no. 6, p. 406, 1934 (reference).



Abad. Wiss. Berlin, 1876, p. 438

(Mauritius).  $\frac{1}{m}$  Boulenger, Proc. Zool.

Soc. London, 1887, p. 658 (Muscat).  $\frac{1}{m}$

$\frac{1}{m}$  Day, Fauna British India, vol. 2, 1889,

p. 31.  $\frac{1}{m}$  Seale, Philippine Journ. Sci.,

vol. 9, no. 1, 1914, p. 67 (Hong Kong).  $\frac{1}{m}$

Herre and Montalban, Philippine Journ.

Sci., vol. 36, no. 1, May 1928, p. 111, pl. 3, fig.

2 (Manila, Calapan, Zamboanga).

Parupeneus dispilurus Steindachner,

Denkschr. Akad. Wiss. Wien, math.-

naturwiss. Classe, vol. 70, 1901, p. 486

(Honolulu); vol. 71, pt. 1, 1907, p. 138

(Hänel, Sokotra).  $\frac{1}{m}$  Zugmayer.



Depth  $2\frac{1}{6}$ ; head  $3\frac{1}{4}$ , Eye  $3\frac{1}{6}$  in head; interorbital cavity twice long as broad; 2 small spines above eye anteriorly. Scales 64. D. VIII, 16, first spine of dorsal and anal minute, second elongate, length of second dorsal spine exceeding body depth; A. III, 14; ventral rays I, 5.

Silvery in alcohol, dark along dorsal base and on upper surface of caudal peduncle. Snout black, also opercle above angle of flap and base of pectoral fin posteriorly.  
(Jordan and Dickerson)  
East Indies.



Leioognathus blunzingeri (Steindachner)

Equula blunzingeri Steindachner,  
Sitzs. Ber. Akad. Wiss. Wien,  
math. naturw. Kl., vol. 107, pt. 1,  
p. 782, pl. 1, figs. 2-a, 1898

(type locality, Bay of Suez,  
Ghulejfabak, Abayil); Denks.  
Akad. Wiss. Wien, math.-naturw.  
Kl., vol. 71, pt. 1, p. 144, 1907 (Yischi,  
South Arabia).



Body elongate oblong, compressed. Head moderate or rather small. Snout moderate. <sup>eye elevated, usually close to upper profile.</sup> Mouth low. Maxillary reaches below front edge of eye. Jaws nearly equal. Teeth in jaws small, in several irregular rows forming narrow villiform bands. Band of villiform teeth on vomer and each palatine. Interorbital nearly flat. Gill rakers 15 to 21 on lower branch of first arch. Scales rather large, 20 to 35 in lateral line. Head more or less scaly. Often small scales on front of soft dorsal and anal. First dorsal with 7 or 8 spines, second dorsal usually with spine and 8 or 9 branched rays. Anal often with 1 or 2 slender weak spines and 6 or 7 branched rays.

Indo-Pacific. As Whitley has pointed out Cuvier's reference in



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Depth  $2\frac{1}{4}$ ; head  $3\frac{2}{5}$ . Snout 3 in head; eye  $3\frac{1}{5}$ ,  $1\frac{1}{10}$  in snout; maxillary reaches eye, length  $2\frac{1}{2}$  in head; interorbital low; lower preopercle edge entire; spine above hind eye edge.

Breast scaled. Cheek naked. Lateral line with 60 to 62 scales, complete to caudal base; 10 or 11 above, 22 or 23 below.

D. VIII, 16, second spine  $2\frac{9}{10}$  in fish without caudal; A. III, 14, second spine  $1\frac{1}{4}$  in head; caudal 1, deeply forked; least depth of caudal peduncle  $4\frac{1}{3}$ ; pectoral  $1\frac{1}{3}$ ; ventral  $2\frac{1}{8}$ .

Back marked with many short, dark waved bars, specks, lines and spots. Under surfaces, eyes and fins uniform, apparently whitish. Dark bar along junction of closed mandible, extending down from upper edge of maxillary.



Length 100 mm.

(Steindachner.

Arabia, Suez. Apparently very close to Leiodonathus smithi, but in that species the lateral line "ceases a short distance in front of the caudal fin."



12706

on preopercle flange. Scales with 5 basal radiating striae; 163 to 194 small apical denticles, with 12 to 25 transverse series of basal elements; circuli very fine.

D. VII - I, 8, I, first spine  $1\frac{1}{3}$  to  $\frac{1}{2}$  in head, first ray 2 to  $2\frac{2}{5}$ ; A. II, 6, I, first ray  $1\frac{9}{10}$  to  $2\frac{1}{4}$ ; caudal  $1\frac{1}{8}$ , deeply forked; least depth of caudal peduncle 3 to  $3\frac{1}{8}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ .

Back dull olivaceous, sides and below paler, with whitish to silvery reflections. Iris yellowish white. Fins all pale brownish.



2293

Leiognathus laura (Cuvier)

Equula laura Cuvier, Règne Animal,  
ed. 2, vol. 2, p. 212, 1829 (on  
Glacer karah Russell, Fishes of  
Coromandel, vol. 1, p. 51, pl. 65,  
1803, type locality, Veiyagapatam). —

Cantor, Journ. Asiatic Soc. Bengal, vol. 18,  
pt. 2, p. 1132, 1849 (1850) (Penang). —

Günther, Cat. Fish. Brit. Mus., vol. 2, p. 502,  
1860 (copied).

— Steindachner, Denks. Akad.

Weiss. Wien, math. naturw. Kl., vol. 71,

pt. 1, p. 144, 1907 (Gischen, southern  
Arabia).

(— Jerdon, Madras Journ. Lit. Sci., p. 138, 1851.

— Day, Fishes of Malabar, p. 105, 1865;

Fishes of India, pt. 2, p. 240, pl. 52, fig. 4,  
1876 (Madras). — Karoli, Fishes of Egypt, Budapest, vol. 5, p. 16, 1881 (Harangony).  
— Day, Fauna British India,  
Fishes, vol. 2, p. 188, 1889.

— Beaufort, Bijdr. Dierk. Amsterdam, p.  
120, 1913 (Amboina; Butan).



Depth  $5\frac{1}{2}$ ; head  $3\frac{4}{5}$ , width  $2\frac{1}{4}$ .  
Snout  $2\frac{1}{8}$  in head; eye 5,  $2\frac{1}{2}$  in  
snout,  $1\frac{1}{4}$  in interorbital; maxillary  
reaches  $1\frac{7}{8}$  in snout; length  $4\frac{1}{4}$  in  
head; teeth villiform, in bands in  
jaws and on vomer; interorbital  
 $4\frac{3}{5}$ , broadly and slightly convex;  
preopercle edge roughly and  
minutely denticulate. Gill rakers  
 $3+8$ , lanceolate,  $\frac{1}{2}$  of gill filaments,  
which  $1\frac{4}{5}$  in eye.

Scales  $154$  in lateral line to  
caudal base and 16 more on latter;  
10 or 11 (pockets) above, 17 below, 56  
predorsal forward to nostrils; 9  
rows below eye on cheeks to preopercle



Leiognathus laura Jordan and  
Starks, Ann. Carnegie Mus.,  
vol. 11, nos. 3-4, p. 444, November 5,  
1917 (Ceylon). — Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
vol. 79, p. 273, 1927 (San Fernando);  
Journ. Bombay Nat. Hist. Soc.,  
vol. 33, no. 1, p. 111, September 30,  
1928 (Bombay; Philippines).

— Weber and Beaufort, Fish. Indo-  
Austral. Archip., vol. 6, p. 332, 1931  
(Kota Baru, Borneo; Buton; Ambonia).



Australia, 1906, p. 109 (Victoria,  
Tasmania, New South Wales); Edible  
Fishes of New South Wales, 1908, p. 66, pl.  
36. <sup>1</sup>/<sub>2</sub> Waite, Records South Australian  
Mus., vol. 2, no. 1, April 23, 1921, p. 100, fig.  
152. <sup>1</sup>/<sub>2</sub> McCulloch, ~~Fishes New South Wales,~~  
~~ed. 2, 1927, p. 50, pl. 21, fig. 183a.~~ Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1929  
(1930), p. 654 (Melbourne).

Sillaginodes punctata Gill, Proc. Acad.  
Nat. Sci. Philadelphia, 1861, p. 505 (compiled).  
<sup>1</sup>/<sub>2</sub> McCulloch, Fishes New South Wales,  
ed. 2, 1927, p. 50, pl. 21, fig. 183a.

Isosillago maculata Macleay, Proc. Linn.  
Soc. New South Wales, vol. 3, 1879, p. 34, pl.  
4, fig. 3. King George Sound.

Isosillago punctata McCulloch, Zool. Results  
Endeavour, vol. 1, pt. 1, Dec. 22, 1911, p. 59, 59,  
(~~description in key~~). 60 (types of Isosillago  
maculata).



*Eggnula dacer* <sup>Valenciennes</sup> ~~Cuvier~~, Hist. nat.  
Poiss., vol. 10, p. 83, 1835 (type  
locality, Ceylon).

— Bleeker, Verh. Batavia. Genoot.  
(makreel.), vol. 24, p. 81, 1852 (Cheribon;  
Batavia; Tegal; Samarang;  
Patiitan; Rembang; Pasuruan);  
(hal. Ichth. Bengal), vol. 25, p. 46,  
1853 (reference); nat. Tijds. ned.  
Indie, vol. 3, p. 53, 1852 (Singapore);  
vol. 18, p. 360, 1859 (Blinjer, Banka).



Known by its very small scales  
and unequal rays of soft dorsal  
and anal. One species in Australia.

Sillaginodes punctata (Cuvier)

Sillago punctata Cuvier, Hist. Nat. Poiss.,  
vol. 3, 1827, p. 413. Port King George.  $\frac{1}{m}$   
Duoy and Garnard, Voyage Astrrolabe,  
Zool., vol. 3, 1834, p. 671, pl. 1, fig. 1.  
Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 245 (Hobson's Bay;  
Port King George)  $\frac{1}{m}$  Canestrini, Arch.  
Zool. Anat. Fisiol. Genova, series 2, vol. 1,  
1869, p. 151 (Australia).  $\frac{1}{m}$  Schmeltz, Cat.  
Mus. Godeffroy, vol. 4, 1869, p. 16 (Australia).  
 $\frac{1}{m}$  Castelnau, Proc. Zool. Acclimat. Soc.  
Victoria, vol. 1, 1872, p. 93 (Melbourne);  
London Internat. Exhib. Cat., 1872, p. 132  
(Victoria).  $\frac{1}{m}$  Klunzinger, Vitz. Ber. Akad.  
Wiss. Wien, math.-naturw. Klasse, vol. 80,  
pt. 1, 1879, p. 369 (Port Philip, Hobson's Bay,  
King George Sound).  $\frac{1}{m}$  Stead, Fishes of



Egmula brevirostris (not Valenciennes)  
Bleeker, Nat. Geneesk. Arch. Ned.  
Indië, vol. 2, p. 518, 1845 (Batavia);  
Verh. Batavia. Genoot. (Madura),  
vol. 22, p. 5, 1849 (Bangcallang);  
(Midd. Oost-Java), vol. 23, p. 9, 1850.  
(Nat. Ichth. Bengal), vol. 25, p. 46,  
1853 (reference).



11867 and 11868,  
14428. Gubat Port, Luzon. June 23,  
1909. Length <sup>78 to</sup> 92 mm.

24060. Iloilo River, shore above.  
June 2, 1908. Length 64 mm.

23950. Isabela, Basilan Island.  
September 11, 1909. Length 60 mm.

23698 to 23701. Jolo. March 6-7, 1908.  
Length 62 to 98 mm.

5310 to 5312. Jolo. March 6, 1908.  
Length 81 to 92 mm. [412, 414.]  
[D. 51249] Langang Point, Davao, Gulf of Davao. May 18, 1908. Length 39 mm.  
1 example of Mactan reef. August 31, 1909.

Length 23 mm.

5743 to 5745. Mahina, Camiguin Island,  
August 3, 1909. Length 72 to 91 mm.

15016 and 23150. Makesi Island, Palawan.  
April 5, 1909. Length 53 to 79 mm. 9 examples.

8667. Manila Harbor. January 3, 1908.  
Length 74 mm.

23254 to 23256. Mantacao Island, west  
coast of Bohol. April 8, 1908. Length 62 to 73 mm.



*Equula gerreoides* (<sup>Valeenciennes</sup> not Cuvier) 2297  
Bleeker, Nat. Tijds. Ned. Indie,  
vol. 1, p. (355) 371, 1850 (Batavia);  
vol. 3, p. 409, 1852 (Pamangkajene);  
Verh. Batavia. Genoot. (Nakreele),  
vol. 24, p. 81, 1852 (Batavia); Nat.  
Tijds. Ned. Indie, vol. 7, p. 313,  
1854 (Bantam); vol. 11, p. 419, 1856  
(Muntok, Banka); vol. 16, p. 407,  
1858 (Japara, Java); Act. Soc.  
Sci. Ind. Neerl. (Sumatra), vol.  
8, p. 12, 1859<sup>(1860)</sup> (Benculen); Nat.  
Tijds. Ned. Indie, vol. 21, p. 138,  
1860 (Muntok, Banka). —  
Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 500, 1860 (reference).



rows on cheek below eye to preopercle  
ridge; fins all with more or less  
fine scales, most numerous on caudal  
basally. Scales with 5 or 6 basal  
radiating striae; 49 to 70 apical  
denticles, with 3 or 4 transverse  
series of basal elements; circuli fine.

D. XI - I, 22, I, second spine  $1\frac{4}{5}$  to  
 $1\frac{9}{10}$  in head, first branched ray  $1\frac{7}{8}$   
to  $2\frac{1}{2}$ ; A. III, 22, I or III, 23, I, first  
branched ray  $2\frac{4}{5}$  to  $3\frac{1}{10}$ ; caudal  $1\frac{1}{2}$   
to  $1\frac{3}{5}$ , very slightly emarginate;  
least depth of caudal peduncle  $3\frac{1}{2}$  to  
 $3\frac{7}{8}$ ; pectoral  $1\frac{9}{10}$  to 2; ventral  $1\frac{9}{10}$   
to 2.

Brown, little darker on back and  
upper surface of head above. Lower



— Bleeker, Verslag. Kon. Akad.  
Wet. Amsterdam, vol. 12, p. 31,  
1861 (Singapore). — De Vis,  
Proc. Linn. Soc. New South Wales,  
vol. 9, p. 545, 1884 (Cape York).

Equula gerroides Károly, Termesz.  
Füzetek, Budapest, vol. 5, p. 161,  
1881 (Singapore).

Leiognathus gerreoides Bleeker,  
Ned. Tijds. Dierk., vol. 2, p. 174,  
1865 (Siam). — Bean and Weed,  
Proc. U. S. Nat. Mus., vol. 42, p. 1604,  
1912 (Batavia).



175  
Depth  $5\frac{1}{2}$  to  $5\frac{3}{5}$ ; head  $3\frac{3}{5}$  to  $3\frac{2}{3}$ ,  
width 2 to  $2\frac{1}{8}$ . Snout  $2\frac{2}{5}$  to  $2\frac{1}{2}$  in  
head; eye  $4\frac{1}{5}$  to 5,  $1\frac{4}{5}$  to  $2\frac{1}{5}$  in  
snout,  $1\frac{1}{5}$  to  $1\frac{1}{3}$  in interorbital;  
maxillary reaches  $1\frac{2}{3}$  to  $1\frac{3}{4}$  in  
snout, length  $4\frac{1}{5}$  to  $4\frac{3}{5}$  in head;  
teeth villiform, in bands in jaws  
and on vomer; interorbital 4 to  $4\frac{1}{3}$ ,  
nearly level; preopercle edge slightly  
roughened. Gill rakers 4 + 10, lanceolate,  
 $\frac{1}{4}$  in gill filaments, which  $1\frac{2}{3}$  in eye.

Scales 68 to 70 in lateral line to  
caudal base and 9 to 13 more on  
latter; 3 or 4 above, 10 below, 21 to  
26 predorsal forward to last fourth  
in antero-nasal part of snout; 2



Depth 2 to  $2\frac{1}{8}$ ; head 3 to  $3\frac{1}{4}$ , width  $1\frac{3}{4}$  to 2. Snout  $2\frac{4}{5}$  to  $3\frac{1}{4}$  in head; eye  $2\frac{7}{8}$  to  $3\frac{2}{5}$ , greater than snout to  $1\frac{1}{6}$  in snout with age, greater than to subequal with interorbital; maxillary reaches eye, expansion 3 to  $3\frac{1}{2}$  in eye, length  $2\frac{1}{4}$  to  $2\frac{4}{5}$  in head; interorbital  $2\frac{1}{2}$  to  $3\frac{2}{3}$ , convex, depressed medially. Gill rakers 6 or 7 + 14 to 17, lanceolate,  $1\frac{1}{2}$  in gill filaments, which  $\frac{1}{2}$  of eye.

Tubular scales 52 to 60 in lateral line to caudal base; 22 above, 36 below. Scales very small, deciduous, absent from entire breast to pectoral and ventral bases and behind



latter to vent. Lateral line less arched than profile of back, median at caudal base.

D. VIII, 16, I, second spine  $1\frac{1}{4}$  to  $1\frac{3}{5}$  in head, second ray  $3\frac{1}{2}$  to  $3\frac{4}{5}$ ; A. III, 14, I, second spine  $1\frac{9}{10}$  to 2, second ray 4; caudal 1 to  $1\frac{1}{10}$ , well forked, slender lobes pointed; least depth of caudal peduncle  $4\frac{1}{2}$  to  $4\frac{3}{5}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , rays II, 16; ventral rays I, 5, fin 2 to  $2\frac{1}{8}$  in head.

Back drab-gray, sides and below silvery white. Iris white. Snout sprinkled with dusky dots along front edge above lips. About 10 obsolete dark transverse lines on back.



ventral dusky line along edge  
of back below dorsal base.  
Diffuse dark gray blotch size  
of pupil at end of supraocular  
spines. Fins pale, spinous  
dorsal terminally pale.

Arabia, India, Ceylon,  
Andamans, Malaya, East Indies,  
Philippines, Siam, Queensland.



Five examples. Catbalogan, Samar.  
April 15, 1908. Length 76 to 88 mm.

One example. Malampaya River,  
Palawan. December 26, 1908.  
Length 40 mm.

One example. Manila market.  
December 12 to 18, 1907. Length 104 mm.

Seven examples. Pucot River,  
Mariveles. January 29, 1909. Length  
64 to 83 mm.

One example. River at Hakoda  
Bay, Palawan. December 31, 1908.  
Length 40 mm.

One example. Sorogon market.  
March 12, 1909. Length 93 mm.

One example. Sandakan market,  
Borneo. March 2, 1908. Length 90 mm.



1098  
f.<sup>1</sup> Broad black transverse band  
from nearly entire base of spinous  
dorsal. trifasciatus <sup>conf 3 name only</sup>

f.<sup>2</sup> No blackish transverse band from  
base of spinous dorsal. multifasciatus

a.<sup>2</sup> Body without black spots or blotches.

g.<sup>1</sup> Pale or whitish blotch behind soft dorsal.

h.<sup>1</sup> Red or gold band from eye to soft  
dorsal base, another parallel below to  
pale post-dorsal saddle; barbels reach  
gill opening. fraterculus

h.<sup>2</sup> No bands as above.

i.<sup>1</sup> Gold or blue lines on head; dorsal and  
anal with oblique lines.

f.<sup>1</sup> Oblique blue lines on head; eye 6 to 6  $\frac{1}{8}$   
in head; L 3 to 3  $\frac{2}{5}$  in snout. cyclostomus

f.<sup>2</sup> Divergent golden lines about eye; eye 3  $\frac{2}{3}$   
in head, 1  $\frac{3}{4}$  in snout. chryserydros

i.<sup>2</sup> No lines on head.

k.<sup>1</sup> Barbels reach ventrals. xanthospilus



U. S. N. M., ~~the~~ 7 examples.  
Colombo, Ceylon. Received September  
30, 1859. Captain Putnam.  
Length 98 to 117 mm.

A. N. S. P., one example. Philippines.  
Length 80 mm.

A. N. S. P., one example. San  
Fernando. 1923. Rev. Joseph  
Clemens. Purchased. Length 80 mm.

A. N. S. P., one example. Bombay,  
1925. Prof. F. Hallberg. Purchased.  
Length 94 mm.



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Leiognathus lineolatus (Cuvier)

Eggnula lineolata Cuvier, Hist. nat. Poiss., vol. 10, p. 86, 1835 (type locality, Java; Anger Straits).

— Bleeker, Verh. Batavia. Genoot. (makreel.), vol. 24, p. 83, 1852

(Batavia); nat. Tijds. Ned.

Indie, vol. 3, p. 445, 1852 (Banka);

vol. 9, p. 282, 1855 (Macassar);

vol. 11, p. 419, 1856 (Muntok,

Banka); vol. 12, p. 215, 1856

(Nias). — Günther, Cat. Fish.

Brit. Mus., vol. 2, p. 502, 1860

(Madras). — Bleeker, Verslag.

Kon. Akad. Wet. Amsterdam,

vol. 12, p. 31, 1861 (Singapore).

— Day, Fishes of India, pt. 2, p.

241, pl. 51C, fig. 3, 1876 (Madras).



Fowler, Proc. Acad. Nat. Sci. Philadelphia,  
 1929 (1930), p. 654 (Tokyo).



- de Vis, Proc. Linn. Soc. New South Wales, vol. 9, no. 3, p. 545, November 1884 (Cape York). — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 26, 1885 (North Celebes). — Nyström, Bih. Kon. Svensk. Vet. Akad. Handl. Stockholm, vol. 13, afd. 4, no. 4, p. 36, 1887 (Nagasaki). — Perugia, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 7, p. 274, 1889.
- Day, Fauna British India, Fishes, vol. 2, p. 190, 1889. — Weber, Siboga Exped., vol. 57, Fische, p. 268, 1913 (Lombok).
- Leiognathus lineolatus Bleeker, Ned. Tijds. Dierk., vol. 2, p. 286, 1865 (reference).

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 337, 1931 (Lombok).



- Ann. Hofmus., Wien, vol. 11, 1896, p. 208  
(Japan). <sup>I</sup><sub>m</sub> <sup>Ishikawa</sup> ~~and~~ Matsuura, Prelim.  
Cat. Fishes Mus. Tokyo, 1897, p. 46. <sup>I</sup><sub>m</sub>  
Jordan and Snyder, Proc. U. S. Nat. Mus.,  
vol. 23, 1900, p. 369 (Tokyo), p. 758  
(Yokohama, Tokyo); vol. 24, 1902, p. 487  
(Hakodate, Matsushima, Tokyo, Misaki,  
Niigata, Tsuruga, Wakamura, Hiroshima,  
Onomichi, Kawatana, Hakata, Nagasaki).  
<sup>I</sup><sub>m</sub> Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, 1905, p. 478 (Kochi).  
<sup>I</sup><sub>m</sub> Franz, Abhandl. Kon. Bayer. Akad. Wiss.,  
Math.-physik. Klasse, vol. 4, Supplem. Band  
1, 1910, p. 83 (Yokohama; Misaki). <sup>I</sup><sub>m</sub>  
Jordan and Thompson, Mem. Carnegie Mus.,  
vol. 6, no. 4, September 1914, p. 260 (Osaka;  
Shimonoseki). <sup>I</sup><sub>m</sub> Fowler and Bean, Proc.  
U. S. Nat. Mus., vol. 62, 1922, p. 69 (Takao).  
<sup>I</sup><sub>m</sub> Jordan and Hubbs, Mem. Carnegie Mus.,  
vol. 10, no. 2, June 27, 1925, p. 248 (Osaka,  
Tokyo, Kobe, Toba, Misawa Bay, Toyama,  
Misaki, Miyazu, Koo, Fukiien). <sup>I</sup><sub>m</sub>



Leiognathus lineolatus Jordan  
and Snyder, Annot. Zool. Japon.,  
vol. 3, p. 68, 1901 (reference).



pn 29

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Sillago japonica Schlegel

Sillago japonica Schlegel, Fauna Japonica,  
Pois., pts. 2-4, 1843, p. 23, p. 10, fig. 1. Japan.  
Richardson, Ichth. China Japan, 1846, p.  
223 (Canton). Günther, Cat. Fishes Brit.  
Mus., vol. 2, 1860, p. 244 (compiled). Gill,  
Proc. Acad. Nat. Sci. Philadelphia, 1861, p.  
504 (compiled). Bleeker, Nederland. Tijdschr.  
Dierk., vol. 2, 1865, p. 56 (Amoy); Verhandl.  
Kon. Akad. Wetensch. Amsterdam, vol. 14,  
1874, p. 69 (Java, Amboina). Günther,  
Rep. Voyage Challenger, vol. 1, 1880, p. 66  
(Inland Sea of Japan). Karli, Termesz.  
Füzetek, Budapest, vol. 5, 1881, p. 162  
(Yokohama; Nagasaki). Sauvage, Bull.  
Soc. Philomath., Paris, series 7, vol. 5,  
1881, p. 105 (Swatow, China). Steindachner  
and Döderlein, Denkschr. Akad. Wiss.  
Wien, math.-naturw. Klasse, vol. 44, pt. 1,  
1885, p. 192 (Japan; Tschifu). Steindachner,



Egmula longispina (not Cuvier)  
De Vis, Proc. Linn. Soc. New South  
Wales, vol. 9, no. 3, p. 542, November  
29, 1884 (Cape York).

Leiognathus vermiculatus Fowler,  
Journ. Acad. Nat. Sci. Philadelphia,  
ser. 2, vol. 12, p. 513, pl. 15, lower fig.  
to left, 1904 (type locality, Padang,  
Sumatra); Proc. Acad. Nat.  
Sci. Philadelphia, vol. 79, p. 273,  
1927 (Orion).



1709i

19419. Sorogon market. March 12,  
1909. Length 120 mm.

3 examples. Verde del Sur Island,  
Palawan reef sand flat. April 6, 1909.  
Length 83 to 104 mm.

56215 U. S. N. M. Bulan, Philippines.  
Bureau of Fisheries (4094). Length 200  
mm.? Is Villago macrolepis. These  
differ from Bleeker's figure of the  
preceding name in the presence of 4  
rows of cheek scales and the spotted  
coloration, though this latter now largely  
faded out.

59933 U. S. N. M. Port Jackson, New  
South Wales. D. G. Stead. Length 206 to 226 mm.  
4 examples.

52930 A. N. S. P. Hong Kong, China. Henry W.  
Fowler. Length 110 mm.

53079 and 53080 A. N. S. P. Delagoa Bay,  
Portuguese East Africa. July 1923. H. W. Bell  
Marley. Length 106 to 138 mm.



Leiognathus hastatus Gilby,  
 Mem. Queensland Mus., vol. 1,  
 p. 58, November 27, 1912 (on  
Equula longispina de Vis).  
 — McCulloch and Whitley,  
 Mem. Queensland Mus., vol. 8,  
 p. 145, 1925 (reference). —  
McCulloch, Austral. Mus.  
 Mem., no. 5, p. 214, 1929 (reference).

Equulites hastatus Whitley, Mem.  
 Queensland Mus., vol. 10, pt. 2,  
 p. 107, pl. 14, fig. 1, March 30, 1932  
 (types of Equula longispina and  
Leiognathus hastatus; north east  
 of Gloucester Head, Queensland).



1709h

*Sillago acutus* Jordan and Evermann  
is also likely another synonym.

The original description says "head  
naked, except on cheeks, where there  
are about two rows of large scales"  
though the figure clearly shows 4 rows  
below the eye to the preopercle ridge.

9118 to 9120, 1188. Catbalogan, Samar.  
April 15, 1908. Length 75 to 185 mm.

22446. Cavite Market. June 26, 1908.  
Length 84 mm.

7836. Cebu market. April 7, 1908.  
Length 203 mm?

8048 and 8049. Manila market.  
March 18, 1908. Length 125 to 126 mm.  
1 example. Manila harbor. March 16, 1908. Length 51 mm.  
22006. Mariveles Bay, Luzon. January  
27, 1909. Length 121 mm.

19515. Ragay River tidewater, Luzon.  
March 10, 1909. Length 47 mm.



Leiognathus moretoniensis Ogilby,  
Mem. Queensland Mus., vol. 1, No.  
1, p. 59, November 27, 1912 (type  
locality, Bulwer, Moreton Bay,  
Queensland; off Moreton Island).  
— Paradise and Whitley, Mem.  
Queensland Mus., vol. 9, p. 84,  
1927 (Pellw Group, Gulf of  
Carpentaria). — McCulloch,  
Austral. Mus. Mem., No. 5,  
p. 214, 1929 (reference).

Equulites moretoniensis Whitley,  
Mem. Queensland Mus., vol. 10, pt.  
2, p. 108, pl. 14, fig. 2, March 30, 1932  
(Port Darwin and Pellw Group;  
types).



1275

Règne Animal, (ed. 2, vol. 2, 1829, p. 157.)  
is a vernacular and must therefore  
give way to the Histoire Naturelle  
des Poissons. In this nearly contempor-  
aneous work Bleeker designates the  
first species as the type of Upeneus,  
so that his action cannot be challenged.  
The designation of Mullus barberinus  
Lacépède as type of Upeneus by Jordan  
and Gilbert <sup>9</sup> (Bull. U. S. Nat. Mus.,  
no. 16, 1883, p. 565) and Mullus  
bifasciatus Lacépède by Jordan and  
Evermann <sup>10</sup> (Gener. of Fishes, pt. 1, 1917,  
p. 127) are therefore invalidated.

<sup>Case 129</sup> Upeneoides rubriniger De Vis  
Upeneoides rubriniger De Vis, Proc.  
Linn. Soc. New South Wales, vol. 9, pt. 3,  
Nov. 29, 1884, p. 458. No locality.

Pseudupeneus rubriniger McCulloch,  
Australian Mus. Mem., vol. 5, pt. 2,



Leiognathus gerreoides (not  
Bleeker) Bean and Weed, Proc.  
Ac. S. Nat. Mus., vol. 42, p. 604, 1912.  
(Batavia).



Depth  $4\frac{2}{3}$  to  $5\frac{1}{3}$ ; head  $3\frac{1}{5}$  to  $3\frac{2}{5}$ , width 2 to  $2\frac{1}{5}$ . Snout  $2\frac{1}{5}$  to  $2\frac{1}{3}$  in head; eye  $3\frac{2}{3}$  to 5,  $1\frac{2}{5}$  to  $2\frac{1}{8}$  in snout, greater than interorbital in young to 1 to  $1\frac{1}{5}$  with age; maxillary reaches  $1\frac{1}{2}$  to  $1\frac{4}{5}$  in snout, length  $3\frac{2}{5}$  to  $4\frac{1}{2}$  in head; teeth in villiform bands in jaws and on vomer; interorbital  $3\frac{3}{4}$  to  $4\frac{2}{3}$ , nearly level or very slightly elevated or only little convex medially; preopercle edge flexible or fimbriate. Gill rakers 3 + 8 or 9, lanceolate,  $2\frac{1}{4}$  in gill filaments, which  $\frac{1}{2}$  of eye.

Scales 63 to 70 in lateral line to caudal base and 12 to 14 more on latter; 5 to 7 above, 10 or 11 below,



2311

Depth 2 to  $2\frac{1}{5}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{5}$ ,  
width 2. Snout 3 in head;  
eye 3 to  $3\frac{1}{2}$ , 1 to  $1\frac{1}{8}$  in snout,  
 $1\frac{1}{8}$  to  $1\frac{1}{8}$  in interorbital; maxillary  
reaches  $\frac{1}{8}$  to  $\frac{1}{3}$  in eye, expansion  
3 to 4 in eye, length  $2\frac{1}{5}$  to  $2\frac{1}{4}$   
in head; interorbital 3 to  $3\frac{1}{8}$ ,  
low, with slight median keel  
little higher than one each  
side. Gill rakers 5 + 15,  
lanceolate,  $1\frac{1}{5}$  in gill filaments,  
which  $2\frac{1}{8}$  in eye.

Scales 48 to 58 in lateral  
line; 18 above, 30 below.  
Breast naked to pectoral and  
behind ventral to vent.  
Lateral line little less arched  
than profile of back, midway  
at caudal base.



D. VIII, 16, I, second spine  $1\frac{2}{3}$  to 2 in head, first ray 4; A. III, 14, I, second spine  $2\frac{1}{8}$  to  $2\frac{1}{5}$ , first ray 3 to  $3\frac{1}{2}$ ; caudal 1 to  $1\frac{1}{10}$ , well forked; least depth of caudal peduncle 4 to  $4\frac{1}{8}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{2}{5}$ , rays II, 16; ventral I, 5, fin  $2\frac{1}{10}$  to  $2\frac{1}{8}$  in head, axillary scale  $\frac{2}{3}$  of fin.

Back gray or pale brown with 11 or 12 darker transverse rather narrow bands, greatly narrower than pale interspaces. First transverse band from end of occipital spine and more pronounced than others. Dark gray line along bases of dorsals. End of snout the blackish brown horizontal bar along above upper lip.



Iris pale, gray in alcohol.  
Fins pale, spinous dorsal  
without dark blotch.

Suez?, Madagascar, India,  
Malaya, East Indies, Japan,  
Queensland. Day's figure of  
Equula lineolata shows but  
7 rather broad transverse  
dark bands on the back,  
while his description says  
"silvery, with vertical zigzag  
lines passing down the back;  
base of pectoral posteriorly  
black; upper edge of dorsal  
darkish." According to Weber  
and Beaufort the color is  
"silvery, back grayish or  
violaceous with dark irregular  
spots; snout brown, fins hyaline."  
Reaches 122 mm.



Though both Leiognathus  
hastatus Ogilby and Leiognathus  
moretoniensis Ogilby are both  
said to have scaly breasts,  
though in many other ways  
approach the present species



U. S. N. M., No. 72644. Java.  
O. Bryant and W. Palmer. Length  
104 to 109 mm. Two examples.  
As Leiognathus gerreoides.

U. S. N. M., No. 72645. Batavia,  
Java. April 2, 1909. O. Bryant  
and W. Palmer. Length 85 to 89 mm.  
Two examples. As Leiognathus  
gerreoides.

A. N. S. P., No. 27,525. Padang,  
Sumatra. A. C. Harrison and  
H. M. Miller. Length 106 mm. Type  
of Leiognathus vermiculatus.

A. N. S. P., four examples. Orion.  
1923. Rev. Joseph Clemens. Purchased.  
Length 60 to 104 mm. As Leiognathus  
vermiculatus.



2316

Leiognathus bindus (Valenciennes)

Equula bindus Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 78, September  
1835 (on Bindoo - Karah Russell,  
Fishes of Coromandel, vol. 1, p.  
50, pl. 64, 1803, type locality,  
Vizagapatam). — Cantor, Journ.  
Asiatic Soc. Bengal, vol. 18, pt. 1,  
p. 1130, 1849 (1850) (Pinang).  
— Jerdon, Madras Journ. Lit.  
Sci., 1851, p. 138. — Bleeker,  
Verh. Batavia. Genoot. (hal. Ichth.  
Bengal), vol. 25, p. 46, 1853  
(reference). — Günther, Cat.  
Fish. Brit. Mus., vol. 2, p. 497,  
1860 (reference). — Day, Fishes of  
India, pt. 2, p. 240, 1876; Fauna  
British India, vol. 2, p. 189, 1889.



few, minute, inconspicuous tubules.  
Scales with 7 basal radiating striae;  
160 apical denticles, with 12 transverse  
series of basal elements; circuli fine.

D. ~~VIII~~ - I, 8, I, third spine  $2\frac{3}{5}$  in  
head, first branched ray  $2\frac{2}{3}$ ; A.  
II, 6, I, first branched ray  $2\frac{7}{8}$ ;  
caudal  $1\frac{1}{2}$ , deeply forked, lobes  
broad and rounded; least depth of  
caudal peduncle  $3\frac{1}{4}$ ; pectoral  $1\frac{1}{3}$ ;  
ventral  $1\frac{2}{5}$ .

Dark brown generally, little lighter  
on under surfaces. Back and sides  
above with more or less inconspicuous  
mottlings of darker or blackish  
brown. Four blackish bands across  
interorbital connecting eyes, last  
much narrower, then broad dark  
occipital band, down to postocular  
side, still another narrower one



— Weber, Siboga Exped., vol. 57, Fische,  
p. 268, 1913 (Lombok; Menado).



dorsal. Chin and lower surface of head paler than above. Fins similar to adjacent body but paler. Caudal with 2 dusky regions on each lobe, one basal and one median.

<sup>23555,</sup>  
<sub>1</sub> 2

3868 and 23869. Rapiropu Island, east Luzon. June 22, 1909. Length 51 to 76 mm.

6397. Rasa Island, Mantaguin Bay, Palawan. April 1, 1909. Length 51 to 57 mm. 3 examples.

16 examples. Romblon. March 25, 1908. Length 62 to 80 mm.

14768, 23189, 23190, 23559 to 23564. Romblon. March 26, 1908. Length 62 to 74 mm. 10 examples.

4 examples. Reef opposite Cebu. April 7, 1908. Length 29 to 40 mm.

1 example. Reef, Virinao Island. December 31, 1908. Length 42 mm.

2 examples. Sablayan, Mindoro. December 13, 1908. Length 30 to 39 mm.



Leiognathus bindus Ogilby,  
Ann. Rep. Amat. Fish. Assoc.  
Queensland, p. 11, 1910-11 (July 1911)  
(Queensland). — Weber and  
Beaufort, Fish. Indo Austral.  
Archip., vol. 6, p. 334, 1931  
(Tandjong Priok; Lombok;  
Kota Bharu, Borneo; Menado;  
Buton). — Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, vol. 87,  
p. 144, fig. 110, 1935 (Bangkok).



1167

(Hood Bay, New Guinea).  $\frac{1}{m}$  Day, Fauna  
British India, Fishes, vol. 2, 1889, p. 30.  
 $\frac{1}{m}$  Sauvage, Hist. Nat. Madagascar, Poiss.,  
1891, p. 224 (part).  $\frac{1}{m}$  Waite, Mem.  
Australian Mus., no. 3, 1897, p. 185  
(Funafuti).  $\frac{1}{m}$  Ishikawa and Matsuura,  
Prelim. Cat. Fishes Mus. Tokyo, 1897, p.  
54.  $\frac{1}{m}$  Seale, Occas. Papers Bishop Mus.,  
vol. 1, no. 3, 1900 (1901), p. 11 (Guam).  $\frac{1}{m}$   
Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 62, 1922, p. 44 (Zamboanga).  $\frac{1}{m}$  Fowler,  
Bull. Bishop Mus., no. 22, 1925, p. 10  
(Guam), ~~1927 (Tahiti)~~, Mem. Bishop  
Mus., vol. 10, 1928, p. 228 (Tahiti, Bonin  
Islands, Kusaie, Papeete, Fute', Tubuai,  
Rarotonga, Guam, Nukuhiva, Mangareva,  
Kingsmills, Society Islands).  $\frac{1}{m}$  J. Schmidt, Trans.  
Pac. Comm. Acad. Sci. USSR, vol. 1, 1930, p. 57  
(Daikuma, Riu Kiu); Bull. Acad. Sci. URSS., 1930, p.  
547 (Okinawa).



2319

Eggnula bindoides Bleeker, Nat.  
Tijds. Ned. Indie, vol. 1, p. (355)  
372, 1850 (type locality, Batavia,  
Java); vol. 2, p. 210, 1851  
(Boeloekomba); Verh. Batavia.  
Genoot. (Makreel.), vol. 24, p.  
83, 1852 (Batavia); Nat. Tijds.  
Ned. Indie, vol. 6, p. 375, 1854  
(Amjer); vol. 7, p. 312, 1854  
(Amjer; Tjiringin); vol. 18, p. 360,  
1859 (Blinja, Banka); vol. 19,  
p. 331, 1859 (Patjitau, Java), p. 435  
(Sumbawa); vol. 20, p. 198, 1859-60  
(Badjoa); vol. 21, p. 138, 1860  
(Muntok, Banka). — Günther,  
Cat. Fish. Brit. Mus., vol. 2, p.  
501, 1860 (Borneo; Moluccas;  
Singapore). — Kner, Reise Novara,  
Fische, p. 168, 1865 (50 miles off  
Ceylon). — Károli, Termesz. Füzetek, Budapest,  
vol. 5, p. 161, 1881 (Canton; Singapore).



Depth  $2\frac{4}{5}$ ; head  $2\frac{3}{4}$ , width  $2\frac{1}{6}$ .  
Snout  $1\frac{2}{3}$  in head; eye  $6\frac{1}{4}$ ,  $3\frac{2}{3}$  in  
snout,  $1\frac{2}{3}$  in interorbital; maxillary  
reaches  $\frac{3}{4}$  to eye, expansion nearly  $\frac{1}{3}$   
eye diameter greater than eye; length  
in head; barbels reach opposite  
hind eye edge, length  $1\frac{2}{3}$  in head;  
teeth large, short, strong, conic,  
uniserial in jaws, none on palate;  
interorbital  $3\frac{1}{5}$  in head, broadly  
convex. Gill rakers  $7+29$ , lanceolate,  
 $1\frac{3}{4}$  in eye; equal gill filaments.

Scales 27 in lateral line to  
caudal base and 3 more on latter;  
3 above, 7 below, 12 predorsal forward  
to last  $\frac{2}{5}$  in snout length; 3 rows on  
check below eye. Tubercles in lateral  
line simple, large, only with very



Equulites virgatus Whitley, mem.  
Queensland Mus., vol. 10, pt. 2,  
p. 108, March 30, 1932 (off  
Bowen).



22735. Jalisse Island. November  
9, 1909. Length 165 mm.

13335. Tidore Island, south of  
Ternate. November 24, 1909. Length  
205 mm.

15132 U.S.N.M. Samoa.  
Steinberger. Length 102 to 108 mm.  
2 examples.

52451 U.S.N.M. Apia, Bureau  
of Fisheries. Length 204 to 250 mm.  
3 examples.

56213 U.S.N.M. Bacon, Bureau of  
Fisheries (No. 3275). Length 217 mm.

65999 U.S.N.M. Papeete, Tahiti.  
Albatross Collection 1900. Length 193 mm.

87642 U.S.N.M. Tahiti. J. M.  
Clements. Length 140 mm.

13470 A.N.S.P. No data. Length 210 mm.

28089 A.N.S.P. Honolulu, Bureau of Fisheries  
(03975). Length 270 mm.

31657 A.N.S.P. Apia, Samoa, Bureau of  
Fisheries. Length 245 mm.  
(02514).



Leiognathus virgatus Fowler, Journ.  
 Acad. Nat. Sci. Philadelphia,  
 ser. 2, vol. 12, p. 515, pl. 15, lower  
 figure to right, June 10, 1904  
 (type locality,  
 1 Padang ~~[Borneo]~~).  
 — Evermann and Seale, Bull.  
 Bur. Fisher., vol. 26, p. 67, 1906  
 (1907) (Bulan). — Jordan and  
Richardson, Bur. Sci. Pub. no. 1,  
 p. 22, 1910 (reference). — Fowler  
 and Bean, Proc. U. S. Nat. Mus.,  
 vol. 62, art. 2, p. 22, 1922 (Tabao;  
 Padang material). — Fowler,  
 Proc. Acad. Nat. Sci. Philadelphia,  
 vol. 79, p. 273, 1927 (Orion).



June 179

Pseudopenus orientalis<sup>9</sup>, new species.

Pseudopenus multifasciatus (not  
Quoy and Gaimard) Kendall and Goldsborough,  
Mem. Mus. Comp. Zool., vol. 35, 1912,  
p. 122 (Cook's Bay, Easter Island).  
Upeneus multifasciatus Fowler, Mem.  
Bishop Mus., vol. 19, 1928, p. 228  
(Cook's Bay).



Depth  $1\frac{4}{5}$  to 2; head  $3\frac{1}{4}$  to  $3\frac{3}{4}$ ,  
width  $1\frac{7}{8}$  to 2. Snout 3 to  $3\frac{3}{4}$   
in head from snout tip; eye  $2\frac{1}{2}$   
to  $2\frac{7}{8}$ , greater than snout or  
interorbital; maxillary reaches  
eye, expansion  $3\frac{1}{2}$  in eye,  
length  $2\frac{1}{10}$  to  $3\frac{1}{10}$  in head;  
interorbital  $2\frac{3}{4}$  to  $3\frac{1}{3}$ , low,  
with median keel. Gill rakers  
5 or 6 + 17 to 20, lanceolate,  $1\frac{1}{8}$   
in gill filaments.

Pores in lateral line about  
35, less arched than profile  
of back, ends below last rays  
of dorsal. Breast covered with  
scales, little distinct.

D. VIII, 16, I, second spine  $1\frac{2}{5}$   
to  $1\frac{7}{8}$  in head, first branched  
ray 4; A. III, 13, I - or 14, I,



second spine 2 to  $2\frac{1}{8}$ ; caudal  
 1 to  $1\frac{1}{8}$ , well forked; least  
 depth of caudal peduncle  $4\frac{1}{2}$   
 to  $4\frac{3}{4}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{1}{2}$ ,  
 rays II, 14; ventral rays I, 5,  
 fin  $2\frac{2}{3}$  in head.

Above gray or brownish on  
 upper half of body, variegated  
 with many variable dark  
 gray blotches or vermiculations.  
 Lower half of body bright  
 silvery white. Snout with  
 blackish bar each side above  
 lips. Iris pale orange. Fins  
 pale brownish yellow, spinous  
 portions of vertical ones  
 burnished with silvery. Spinous  
 dorsal with blackish horizontal  
 line little below middle in height.



Pectoral with blackish dots on  
axil.

India, Ceylon, Pinang, East  
Indies, Philippines, China, Formosa,  
Queensland.



Fifteen examples. Iloilo, Leyte.  
July 26, 1909. Length 31 to 48 mm.

36 examples. Balayan Bay,  
Luzon. January 19, 1908. Length 53  
to 82 mm.

Seven examples. Catbalogan, Samar.  
April 15, 1908. Length 60 to 72 mm.

~~Sixteen examples.~~

5989. Cavite market. December 1,  
1908. Length 56 mm.

Sixteen examples. [1893] Cebu  
market, Cebu. September 4, 1909.  
Length 40 to 58 mm.

One example. D. 5303. China Sea,  
(Lat.  $21^{\circ}44'N$ , Long.  $114^{\circ}48'E$ ), vicinity  
of Hong Kong. In 34 fathoms.  
August 9, 1908. Length 38 mm.



447

p. 648 (Honolulu).

Mullus pleurostigma Playfair, Fishes of  
Zanzibar, 1866, p. 40 (Zanzibar).

Parupeneus pleurostigma Bleeker,  
Verhandel. Kon. Akad. Wetensch. Amsterdam,  
vol. 15, no. 3, 1875, p. 29 (Amboina and Banda);  
Atlas Ichth. Ind. Néerland., vol. 9, 1877,  
pl. (3) 93, fig. 3. — Steindachner,  
Denkschr. Akad. Wiss. Wien, math.-  
naturwiss. Classe, vol. 70, 1901, p. 486  
(Laysan Island). — Barnard, Ann.

South African Mus., vol. 21, pt. 2, 1927, p.  
590 (Delagoa Bay).

Pseudupeneus pleurostigma Jenkins, Bull.  
U. S. Fish Comm., vol. 22, 1902 (1903), p. 456  
(Honolulu). — Snyder, Bull. U. S. Fish  
Comm., vol. 22, 1902 (1904), p. 527 (Honolulu).

— Jordan and Evermann, Bull. U. S. Fish  
Comm., vol. 23, pt. 1, 1902 (1905), p. 260, fig.  
108 (Honolulu; Hilo).



1450. D. 5361. Corregidor Light,  
S.  $89^{\circ}$  W., 7.2 miles (lat.  $14^{\circ}24'15''$   
N., long.  $120^{\circ}41'30''$  E.), Manila Bay.  
In 12 fathoms. February 8, 1909.  
Length 35 to 54 mm. Five examples.

One example. Dumaca River,  
Luzon. February 25, 1909. Length?

19391. Iloilo market, Iloilo.  
March 28, 1908. Length 68 mm.

One example. Iloilo market.  
May 31, 1908. Length 24 mm.

One example. Iloilo market.  
June 1, 1908. Length 30 mm.

Four examples. Lingayen Gulf,  
west coast of Luzon. May 11, 1909.  
Length 46 to 54 mm.

19764 [1532]. Manila market.  
April 20, 1909. Length 87 mm.

Three examples. Sangley Point, Cavite.  
March 23, 1908. Length 55 to 57 mm.



Canal 29

Pseudupeneus pleurostigma (Bennett)

Upeneus pleurostigma Bennett, Proc. Zool. Soc. London, vol. 1, 1831, p. 59. Mauritius.  
<sup>1</sup>/<sub>m</sub> Günther, Journ. Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874, p. 58 (Tahiti; Apamama, Gilbert Islands). <sup>1</sup>/<sub>2</sub> Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 229 (on Liénard). <sup>1</sup>/<sub>m</sub> Waite, Records Australian Mus., vol. 4, 1901, p. 37, pl. 5 (Lord Howe Island). <sup>1</sup>/<sub>m</sub> Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 523 (Chinawa). <sup>1</sup>/<sub>2</sub> Fowler, Copeia, no. 112, Nov. 20, 1922, p. 83 (Hawaii); Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 245 (Delagoa Bay); Bull. Bishop Mus., no. 22, 1925, p. 26 (Honolulu). <sup>1</sup>/<sub>m</sub> Fowler and Ball, Bull. Bishop Mus., no. 26, 1925, p. 16 (Laysan and Lisiansky). <sup>1</sup>/<sub>2</sub> Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 231, pl. 20 C (Maui, Honolulu, Laysan); Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930).



Four examples: Tacloban market.  
July 25, 1909: Length 29 to 45 mm.

U. S. N. M., No. 86542. Pondicherry,  
India. E. Deschamps. Length 60 mm.  
Very poor condition.



the head (3 scales in Bleeker's).  
pale streaks to eye not continued  
over postocular, soft dorsal with 2  
dark bands parallel with its upper  
edge, anal uniform and with but 6  
soft rays. The gill rakers are given  
as 6 + 21 or 22.

22289. River at Port Dupon, Leyte.  
March 17, 1909. Length 75 mm.

2 examples. Varadero Bay, Mindoro.  
July 23, 1908. Length 55 or 56 mm. 2 examples.



U. S. N. M., No. 32747. Indian  
Archipelago. Royal Museum of  
Leiden. Length 60 mm. As  
Leiognathus bindoides.

U. S. N. M., No. 56058. Bulau.  
Bureau of Fisheries (3916).  
Length 68? mm. As Leiognathus  
virgatus.

U. S. N. M., No. 72639. Java.  
O. Bryant and W. Palmer.  
Length 72 mm. As Leiognathus  
bindoides.

U. S. N. M., No. 76611. Tabao,  
Formosa. Dr. F. Baker. Length 80  
to 108 mm. As Leiognathus virgatus.



A. N. S. P., no. 27526. Padang,  
Sumatra. A. C. Harrison and  
H. L. Hiller. Length 114 mm.  
Type of Leiognathus virgatus  
Fowler.

A. N. S. P., four examples.  
Orion. 1923. Rev. Joseph Clemens.  
Purchased. Length 60 to 104 mm.



2332

Genus Macilentichthys Whitley

Macilentichthys Whitley, Mem.  
Queensland Mus., vol. 10, pt. 2, p.  
114, March 30, 1932. (Type  
Macilentichthys propei Whitley,  
orthotypic.)

Differs from Leiognathus  
chiefly in its elongate body, the  
depth  $2 \frac{3}{5}$  to 4.



Canal 29

1001

Upeneus bensasi (Schlegel)

Mullus bensasi Schlegel, Fauna Japonica,  
Poiss., pts. 2-3, 1843, p. 30, pl. 1, fig. 2.  
Bay of Nagasaki.

Upeneoides bensasi Bleeker, Verhandel.

Batavia. Genootsch. (Nalez. Ichth. Japan),  
vol. 25, 1853, p. 10; vol. 26, 1854, p. 71

(Nagasaki); Act. Soc. Ind. Néerland.

(No. 3), vol. 3, 1857-58, p. 5 (Japan);

(No. 9), vol. 5, 1858-59, p. 2 (Nagasaki);

Naturk. Tijdschr. Nederl. Indië, vol. 20,

1859-60, p. 235 (Nagasaki). <sup>1</sup>/<sub>m</sub> Günther,

Cat. Fishes Brit. Mus., vol. 1, 1859, p. 399

(compiled). <sup>1</sup>/<sub>m</sub> Day, Fishes of India, pt.

2, 1876, p. 121, pl. 30, fig. 5 (Madras,

Coromandel). <sup>1</sup>/<sub>m</sub> Günther, Rep. Voy.

Challenger, vol. 1, 1880, p. 65 (Yokohama,

Kobe). <sup>1</sup>/<sub>m</sub> Károli, Termesz. Füzetek,

Budapest, vol. 5, 1881, p. 156 (Kobe; Nagasaki).

<sup>1</sup>/<sub>m</sub> Day, Fauna British India, Fishes, vol.



Analysis of Speciesa.<sup>1</sup> Depth  $2\frac{3}{5}$  to 3.b.<sup>1</sup> Pectoral  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in head.c.<sup>1</sup> Eye 3 to  $3\frac{1}{3}$  in head. berbis.c.<sup>2</sup> Eye  $2\frac{7}{8}$  to 3 in head. rioulatus.b.<sup>2</sup> Pectoral  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in head.leuciscus.a.<sup>2</sup> Depth 4.elongatus.



2334

Macilentichthys berberis (Valenciennes)

Equula berberis Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 85, 1835  
(type locality, Djedda, Red Sea;  
Lohaja) (on Zorshäl).

Leiognathus berberis Fowler, Mem.  
Bishop Mus., vol. 10, p. 153, 1928  
(compiled). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol.  
6, p. 336, 1931 (Makassar; Saleyer;  
Ceram).



basally. Scales with 6 basal radiating  
striations; 30 short apical denticles;  
oculi fine.

D. X, I, 23, fourth spine  $2\frac{1}{6}$  in head;  
A. II, 8, I, second spine  $2\frac{1}{10}$ ; caudal  
damaged; caudal peduncle 3;  
pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{4}{5}$ .

Back dull slate brown, belly and  
lower surface pale, with silvery  
white sheen. Fins and iris all  
dull brown.

In many ways this species resembles  
Sciaena russeli (Cuvier) but differs  
in its greatly longer gill rakers.

83309 U.S.N.M. no locality ("labeled  
Fiji" which surely erroneous, obtained  
more likely in the Philippines?).  
Wilkes Exploring Expedition. Length 124 mm.



Macilentichthys berbis Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. 87, p. 144, fig. 108, 1935 (Suracha,  
Siam).



(compiled). <sup>1</sup><sub>m</sub> Károli, Termesz. Füzetek,  
Budapest, vol. 5, 1881, p. 156 (Yokohama).  
<sup>1</sup><sub>m</sub> Snyder, Proc. U. S. Nat. Mus., vol. 32, 1907,  
p. 96 (Misaki). <sup>1</sup><sub>m</sub> Evermann and Seale,  
Bull. Bur. Fisher., vol. 26, 1906 (1907),  
p. 88 (Bulan; Japan). <sup>1</sup><sub>m</sub> Jordan and  
Hubbs, Mem. Carnegie Mus., vol. 10, no.  
2, 1925, p. 246 (Kagoshima). <sup>1</sup><sub>m</sub> Herre  
and Montalban, Philippine Journ. Sci.,  
vol. 36, no. 1, May 1928, p. 134 (compiled).  
Mullus flavolineatus Lacepede, Hist. Nat.  
Pois., vol. 3, 1802, pp. 384, 406. No locality.

<sup>1</sup><sub>m</sub> J. Schmidt, Trans. Pac. Comm. Acad. Sci. USSR,  
vol. 1, 1930, p. 56 (Kominato, Riu Kiu); Bull. Acad.  
Sci. URSS, 1930, p. 546 (Okinawa).

Mullus flavo-lineatus Jouan, Mém.  
Soc. Imp. Sci. Nat. Cherbourg, series 2,  
vol. 3, 1868, p. 252 (Hong Kong).

Mullus (Mulloides) flavolineatus Martens,  
Verhand. zool. botan. Gesellsch. Wien, vol.  
16, 1866, p. 378 (Red Sea).



Scomber equula (part) Forskål,<sup>2336</sup>  
descript. Animal., p. 58, 1775.



1154

22517, 22519. Dagupan, Luzon.  
March 19, 1908. Length 77 to 100 mm.

24 examples. Manila Bay. December  
6, 1907. Length 83 to 98 mm. Abundant  
on sandy shores. Drummed audibly  
when touched. All individuals appeared  
to drum and on dissection though gonads  
not greatly developed both sexes  
seemed to be represented. The air  
bladder is of moderate size, pointed  
posteriorly and with bilobed head and  
all compound racemose, hollow and  
filled with air. Three or 4 most posterior  
more simple and directed nearly straight  
backward. Color of all upper parts  
bluish dusky or slaty, white below.  
Fins slaty, caudal greenish.

6546. Off Ilaet. June 15, 1909. Length 145 mm.

5021 to 5023. Tacloban market. July 25,  
1909. Length 188 to 203 mm.



Eggnula oblonga Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 85, 1835  
(type locality, Timor; Malabar).

— Bleeker, Nat. Tijds. Ned. Indie,  
vol. 2, p. 210, 1851 (Boeloeckomba);  
Verh. Batavia. Genoot. (Makreel),  
vol. 25, p. 84, 1852 (Batavia);  
(Nat. Ichth. Bengal), vol. 25, p. 46,  
1853 (reference); Nat. Tijds. Ned.  
Indie, vol. 6, p. 375, 1854 (Anjer);  
vol. 7, p. 313, 1854 (Anjer; Tjiringin);  
vol. 8, p. 437, 1855 (Bonthaian,  
Celebes); vol. 17, p. 143, 1858-59  
(Boeling, Bali); vol. 20, p. 141, 1859-  
60 (Badjoa, Bali), p. 198 (Badjoa),  
<sup>Günther, Cat. Fish. Brit. Mus., vol. 20, p. 502, 1860 (compiled).</sup>  
p. 206 (Boeling), <sup>A. Bleeker,</sup> Verslag. Kon. Akad.  
Wet. Amsterdam, vol. 12, p. 32, 1861  
(Singapore), p. 64 (Pinang).



Cover 179

1661

Sciaena dubia Fowler and Bean

Sciaena dubia Fowler and Bean,  
Proc. U. S. Nat. Mus., vol. 63, 1923, p.  
16. No locality.

Depth  $3\frac{1}{4}$ ; head  $3\frac{1}{4}$ , width  $2\frac{1}{10}$ .  
Snout 4 in head; eye  $3\frac{1}{4}$ , greater  
than snout or interorbital; maxillary  
reaches  $\frac{3}{5}$  in eye, expansion 3 in eye,  
length  $2\frac{2}{5}$  in head; chin with 4 pores  
and short median barbel; teeth  
uniformly fine, minute, in narrow  
band in each jaw; interorbital 4;  
preopercle entire. Gill rakers 8 + 14,  
equal gill filaments or  $1\frac{1}{2}$  in eye.

Scales (pockets) 42? in lateral  
line to caudal base; rows above  
lateral line parallel, below  
horizontal, largest and narrowly  
imbricated along sides medially;  
small scales on dorsal and caudal



— Day, Fishes of Malabar, p. 106, 1865.

— Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 467, 1891 (Red Sea).

— Day, Fishes of India, pt. 2, p. 243, 1876. — Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876 (Nagasaki; Bangkok). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 116, 1881 (Singapore).  
 — Meyer, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, p. 26, 1885 (North Celebes).

— Gogorza, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 17, p. 291, 1888 (Samar).

— Day, Fauna British India, Fishes, vol. 2, p. 193, 1889.

— Weber, Siboga Exped., vol. 57, Fische, p. 268, 1913 (Ceram; Saleyer).

— Beaufort, Bijdr. Dierk. Amsterdam, p. 120, 1913 (Macassar).



11 examples. Batan Island, east of Luzon. June 5, 1909. Length 22 to 70 mm.

41 examples. Batan Island. July 22, 1909. Length 21 to 55 mm.

21863, 23283 to 23486, Biri Channel, Balicuatro Islands. June 1, 1909. Length 68 to 88 mm.

23813 to 23815, Biri Channel. June 2, 1909. Length 31 to 89 mm. 6 examples.

5 examples. Bubuan Island, Jolo. February 14, 1908. Length 64 or 65 mm. 5 examples.

15565. Bugsuk Island, north Balabac Strait. January 5, 1909. Length 54 mm.

9215. Camp Overton, Mindanao. August 6, 1909. Length 55 mm. 7 examples. Canmahala Bay, Luzon.

March 11, 1909. Length 53 to 60 mm.

23650 to 23658. Caracaran, Batan Island, Luzon. June 8, 1909. Length 43 to 73 mm. 12 examples.

15086 and 15087. Capulaan Bay, Pagbilao (16799 and 16804. Busin Harbor, Burias Island. March 7, 1909. Length 56 to 58 mm).



Leiognathus oblongus Bleeker,  
Ned. Tijds. Dierk., vol. 1, p. 270,  
1863 (reference).



peduncle. Spinous dorsal blackish,  
except posteriorly; ventrals blackish  
at the tip."

Just what Weber means by his  
reference to Apogon batjanensis we  
cannot tell. Possibly it may have been

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'Zool. Forschungs. Austral. Seman, vol. 5,  
1895, p. 263 (Amboina).

---

intended for Apogon bandanensis?



*Eggnula gracilis* Bleeker, Nat.  
Tyds. Ned. Indië, vol. 7, p. (228)  
250, 1854 (type locality, Manado,  
Celebes); vol. 17, p. 143, 1858-59  
(Boeleling, Bali); vol. 20, p. 206,  
1859-60 (Boeleling).



1113  
56123 U.S.N.M. San Fabian.  
Bureau of Fisheries (4097). Length  
131 mm.

57979 U.S.N.M. Zamboanga. Dr.  
E. A. Mearns. Length 128 to 139 mm.  
3 examples.

2 examples. A.N.S.P. Philippines.  
Commercial Museum of Philadelphia.  
Length.

52711 to 52716  
~~Examples~~ A.N.S.P. Orion, Luzon.  
May 11,  
1923. Rev. Joseph Clemens. Length 60 to  
Purchased.  
140 mm.

4 examples. A.N.S.P. Bombay. Bombay  
Natural History Society. Length 144 to 217 mm.

53023. A.N.S.P. Durban beach, Natal.  
H. W. Bell Marley. Length 243 mm.



Leiognathus edwardsi Evermann  
and Seale, Bull. Bur. Fisher.,  
vol. 26, p. 68, fig. 7, 1906 (1907)  
(type locality, San Fabian, Philippines).  
Jordan and Richardson, Bur.  
Sci. Pub., Manila, vol. 1, p. 22, 1910  
(reference). — Fowler and Bean,  
Proc. U. S. Nat. Mus., vol. 62, art.  
2, p. 24, 1922 (reference).

Macilentichtys edwardsi Whitley,  
Mem. Queensland Mus., vol. 10, pt. 2,  
p. 115, March 30, 1932 (reference).



1663

Family Sillaginidae Cuv 121

Body long, rather slender or tapering from spinous dorsal forward and backward, little or slightly compressed. Head elongate, with conic contour and forehead depressed. Eyes lateral or directed little upward, nearly median. Mouth small, terminal, cleft short. Premaxillaries protractile. Teeth small, in jaws and on front of vomer, none on palatines. Preopercle entire or crenulated, bent to cover under surface of head. Opercle small, with short spine. Gill opening wide. Pseudobranchial present. Branchiostegals 6. Stomach coecal. Pyloric appendages few. Air bladder simple. Skull with mucous cavities. Vertebral 34 to 43, of which 22 to 27 caudal. Scales small, ctenoid. Lateral line complete to caudal base or little



Depth  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ; head  $3\frac{1}{3}$  to  $3\frac{2}{3}$ .  
 Snout  $2\frac{7}{8}$  to  $2\frac{9}{10}$  in head; eye  
 $3$  to  $3\frac{1}{2}$ ,  $1\frac{1}{10}$  to  $1\frac{1}{8}$  in snout,  
 subequal with interorbital;  
 maxillary reaches  $\frac{4}{5}$  in snout,  
 length  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in head;  
 interorbital  $3$  to  $3\frac{1}{8}$ , low;  
 lower preopercle edge finely  
 serrate; broad, blunt, anterior  
 supraocular spine.

Scales small, thin, deciduous,  
 70 along lateral line, pores 47  
 to 50 to caudal base. Breast  
 and cheek scaly.

D. VII or VIII, 16 or 17, second  
 spine  $1\frac{2}{3}$  to  $1\frac{3}{5}$  in head, first  
 ray  $3\frac{2}{5}$  to 4; A. III, 13 or 14,  
 second spine  $1\frac{2}{5}$  to  $1\frac{7}{8}$ , first  
 ray  $3\frac{7}{8}$  to 4; caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ ,  
 forked; least depth of caudal  
 peduncle 4 to  $4\frac{1}{2}$ ; pectoral  $1\frac{1}{2}$  to



2343

$1\frac{3}{4}$ , rays I, 12; ventral rays I, 5,  
fin  $2\frac{2}{3}$  to  $2\frac{3}{5}$  in head.

Back gray, vermiculated  
obscurely with dark gray.  
Blackish line along base of  
dorsal. Dark gray bar often  
along pectoral base. Front  
edge of snout blackish. Iris  
silvery white. Lower sides  
silvery white, often with dark  
dots. Fins pale, lower with  
faint yellowish tint.

Red Sea, India, Malaya,  
East Indies, Siam, Philippines.



→ A. N. S. P., two examples.

Sriraja, Siam. June 10, 1934.

R. M. De Schauensee. Length  
50 to 62 mm.

U. S. N. M., no. 55904. San Fabian,  
Pangasinan, Luzon. E. L. Hall.

Bureau of Fisheries (3876 [10778]).  
Length 125 mm. Type of Leiognathus  
edwardsi.



1883

Amia bandanensis (Bleeker).

Apogon bandanensis Bleeker, Nat. Tijds.  
ned. Indie, vol. 6, 1854, p. 95. heira,  
Banda Island. — Günther, Cat. Fishes Brit.  
Mus., vol. 1, 1859, p. 238 (copied). — Meyer,  
Ann. Soc. Españ. Hist. Nat. Madrid, vol. 14,  
1885, p. 12 (Manado). — Steindachner,  
~~Abhandl. Senckenberg. Naturf. Gesell.~~, vol. 25,  
~~1900, p. 426 (Ternate)~~. Jugmayer, Abhandl.  
Bayer. Akad. Wiss., vol. 26, pt. 6, 1913, p. 10  
(Mekran). — Weber, Siboga Exped., vol. <sup>57, Fishes</sup> 65,  
1913, p. 222 (Savu; Solor; Sanghisiapo,  
Sulu Archipelago; Manado; Biaru; Siau;  
Ibi major; Atjatuning, west coast New Guinea;  
South Island at Saleyer; east point of Timor;  
Pepela Bay, Rotti).

Apogon (Amia) bandanensis Klunzinger,  
Fisch. Roth. Meer., 1884, p. 21.



Leiognathus rivulatus (Schlegel)

Egumla rivulata Schlegel, Fauna  
 Japonica, ~~x~~ Poiss., pt. 2-4, p. 126,  
 pl. 67, fig. 2, 1843 (type locality,  
 Japan). — Richardson, Ichth. China and Japan,  
 2. 276, 1846 (China; Japan).  
 — Bleeker, Verh. Batavia. Genoot.  
 (nat. Ichth. Japan), vol. 25, p. (15)  
 38, 1853 (Nagasaki); Act. Soc.  
 Sci. Ind. Neerl., vol. 3, no. 3, p. 6,  
 1857-58 (Japan). — Günther, Cat.  
 Fish. Brit. Mus., vol. 2, p. 504, 1860  
 (copied).



sometimes cartilaginous.

<sup>94</sup> Sillago is now restricted to the species having similar forms, scales of moderate size and nearly equal dorsal and anal fins; and it consequently excludes some species that have been referred to it by previous naturalists, the Sillago punctatus being taken as the type of one, and S. Domina as that of another genus. Even in the genus as now restricted, there are more considerable variations than are often found in the same genus. While the ventral spine is slender and, as usual, osseous in most species, it is in one thick and cartilaginous. Again, some species have cycloid scales in the cheeks and forehead, while others have ctenoid. The preoperculum is almost entire in some, while in others it is ciliated. As these differences do not,



Leiognathus rivulatum Jordan  
and Snyder, Annot. Zool. Japon.,  
vol. 3, p. 68, 1901 (reference). —  
Snyder, Proc. U. S. Nat. Mus., vol.  
42, p. 412, 1912 (Kagoshima). —  
Jordan, Tanaka, Snyder, Journ.  
College Sci. Tokio, vol. 33, p. 131,  
1913 (reference).

— Izuka and Matsuura, Cat. Zool. Spec.  
Tokyo Mus., Vertebr., p. 157, 1920  
(Tateyama, Boshu).

Leiognathus rivulata Anonymous,  
Illustr. Aquat. Animals Japan, vol. 1,  
pl. 30, fig. 5, 1931.



Cue 139

1666

Genus Villago Cuvier

Villago Cuvier, Règne Animal, vol. 2, 1817, p. 258. Type Villago acuta Cuvier, designated by Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 503.

Vilago Swainson, Nat. Hist. Animals, vol. 2, 1839, p. 205. Type Villago acuta Cuvier.

Body long, slender, little compressed, rounded above to level below. Head conic, elongate, compressed, gradually narrowed forward. Eyes moderate or large, nearly median. Mouth small, jaws nearly even or lower shorter. Teeth villiform. Scales 50 to 90 in lateral line. First dorsal slopes down backward, spines 11 or 12, rays 17 to 23. Anal with 2 slender spines, nearly long as second dorsal, rays 15 to 23. Caudal emarginate. Ventral spine



2347

Depth  $2\frac{4}{5}$  to 3; head  $3\frac{1}{2}$  to  $3\frac{3}{5}$ , width 2. Snout 3 to  $3\frac{1}{8}$  in head; eye  $2\frac{7}{8}$  to 3, greater than <sup>or interorbital</sup> snout, in young to subequal with age; maxillary reaches front eye edge, expansion 3 to  $3\frac{1}{2}$  in eye, length  $2\frac{1}{4}$  to  $2\frac{2}{3}$  in head; interorbital  $2\frac{4}{5}$  to  $3\frac{1}{5}$ , low, with slight median keel. Gill rakers 5 + 13, lanceolate,  $1\frac{1}{5}$  in gill filaments, which  $2\frac{1}{2}$  in eye.

Tubular scales 45 or 46 in lateral line, which ends below last dorsal rays, less arched than upper profile of back. Chest and breast scaled.

D. VIII, 16, I, second spine  $1\frac{3}{5}$  to  $1\frac{2}{3}$  in head, first ray  $3\frac{2}{5}$  to  $3\frac{1}{2}$ ; A. III, 14, I, second spine  $2\frac{1}{4}$  to  $2\frac{1}{3}$ , first ray 3 to  $3\frac{1}{4}$ ; caudal forked;



least depth of caudal peduncle  
 $4\frac{1}{2}$  to 5; pectoral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ , rays  
II, 13; ventral I, 5, fin  $2\frac{1}{8}$  to  $2\frac{1}{2}$ ,  
axillary scale 3 in fin.

Back gray, drab or  
brownish until level with eye,  
marked with many larger  
variable darker blotches.  
In young blotches larger, fewer  
and more contrasted. Iris and  
lower half of body silvery white.  
Dark brown band around end  
of snout close above upper lip.  
Fins pale brownish and no  
dark blotch on spinous dorsal.  
Dark-gray line along bases of  
dorsals.

<sup>Okina,</sup>  
Japan. Apparently differs  
~~from the~~



U. S. N. M., No. 59624. Nagasaki,  
Dr. H. M. Smith. Length 73 mm.

U. S. N. M., No. 74789. Yawata-  
hami, Izo, Japan. Y. Manabe.  
Length 59 mm.

U. S. N. M., one example (with  
71223 U. S. N. M.). Shimizu,  
Suruga, Japan. Bureau of  
Fisheries. Length 48 mm.



Umbrina fuscolineata Van Bonde, Fishes  
Marine Survey South Africa, Special  
Report, 1, 1923, p. 15, pl. 4.

1  
m Barnard, Ann. South African Mus.,  
vol. 21, pt. 2, 1927, p. 577 ( Natal; Zululand  
coast; 20 to 30 fathoms ).



2350

Macilenticthys leuciscus (Günther)

Equula leuciscus Günther, Cat. Fish.  
Brit. Mus., vol. 2, p. 503, 1860  
(type locality, Amboina). — Meyer,  
Anal. Soc. Españ. Hist. Nat. Madrid,  
vol. 14, p. 26, 1885 (Cebu).

Leiognathus leuciscus Jordan and  
Seale, Proc. U. S. Nat. Mus., vol. 28,  
p. 777, 1905 (Negros). — Jordan and  
Richardson, Bureau of Sci. Pub.,  
Manila, vol. 1, p. 22, 1910 (reference).

— Fowler and Bean, Proc. U. S. Nat.  
Mus., vol. 62, art. 2, p. 23, 1922  
(Takao, Formosa).



6 ft 2 m 10 in

Analysis of ~~the~~ genera

Sillaginac.

a.<sup>1</sup> Snout conic; teeth uniformly small; dorsal spines 10 to 12, moderate.

b.<sup>1</sup> Scales moderately small, 50 to 80; dorsal spines 10 or 11; soft dorsal and anal subequal.

Sillago.

b.<sup>2</sup> Scales very small, about 170; dorsal spines 12; soft dorsal much longer than anal.

Sillaginodes.

Sillaginopsinae.

a.<sup>2</sup><sub>1</sub> Snout depressed; outer teeth in front enlarged; scales small, about 90; dorsal spines 9, second elongated.

Sillaginopsis.

Cuv 3  
name only



— Weber and Beaufort, Fish. Indo  
Austral. Archip., vol. 6, p. 327, 1931  
(compiled).

Macilenticthys bucciscus Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
vol. 87, p. 144, fig. 109, 1935 (Suracha,  
Siam).



Widely distributed from East Africa,  
Indian Ocean, East Indies, Philippines,  
Riu Kiu, Melanesia, Micronesia, Polynesia,  
Though Jordan and Seale say "Bleeker  
is certainly wrong in regarding savayensis  
as the same as Amia bandanensis."

we do not think so. The color, due to  
alcohol, is so greatly variable that  
we feel little hesitation in arranging  
the large series of specimens below under  
this species. The description of Lipogon  
gardineri Regan also seems to represent  
Amia bandanensis. Though no dark  
oblique streak is mentioned on the cheek,  
as this often fades or is very faint  
at times, it may have faded out.

Regan describes it with "faint traces  
of 3 dark vertical bars, the first below  
the spinous dorsal, the second below the  
soft dorsal, the third on the caudal



? Egmula parviceps Valenciennes,  
Hist. nat. Poiss., vol. 10, p. 87,  
1835 (type locality, Mauritius).  
— Sauvage, Hist. Madagascar,  
Poiss., p. 333, pl. 31, fig. 2, 1891  
(type).



Apenens flavolineatus Cuvier, Hist. nat. Poiss., vol. 3, 1829, p. 456 (Mauritius, Bourbon, Bowron, Borabora, Massana).  
 $\frac{1}{m}$  Rüppell, Neue Wirbelth. Fische, 1835, p. 101, pl. 26, fig. 1 (Mokila).  $\frac{1}{m}$  Jenyns, Zool. Voy. Beagle, Fish, pt. 4, 1842, p. 24 (Keeling Islands).  $\frac{1}{m}$  Guichenot, Notes Ile Réunion, vol. 2, 1862, p. 24.  
Hypeneus flavolineatus Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, 1849, p. 1018 (Pinang).

Mulloides flavolineatus Bleeker, Verhand. Batavia. Genootsch. (Percoid), vol. 22, 1849, p. 12 (name only).  $\frac{1}{m}$  Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 403 (China, Madagascar).  $\frac{1}{m}$  Kner, Reise Novara, Fische, 1865, p. 69 (New Holland).  
 $\frac{1}{m}$  Schmeltz, Cat. Mus. Godeffroy, no. 4, 1869, p. 14 (Savay).  $\frac{1}{m}$  Günther, Journ. Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874,



Egumula novae-hollandiae Steindachner,  
Denks. Akad. Wiss. Wien, math.-naturw.  
Kl., vol. 41, pt. 1, p. 11, 1879 (type  
locality, Townsville, Queensland,  
Australia). — Klunzinger, Sitzs.  
Ber. Akad. Wiss. Wien, math.-  
naturw. Kl., vol. 80, pt. 1, p. 379,  
1879 (reference).

Leiognathus novae-hollandiae  
McCulloch and Whitley, Mem.  
Queensland Mus., vol. 8, p. 145,  
1925 (reference). — McCulloch,  
Austral. Mus. Mem., no. 5, p. 212,  
1929 (reference).

Egumulites novae-hollandiae Whitley,  
Mem. Queensland Mus., vol. 10, pt.  
2, p. 106, March 30, 1932 (copied).



September 10, 1929, p. 223 (type in Queensland Mus. S. 3092 is labelled Tully River, Queensland).

Depth less than 3; head 3, "physiognomy labroid", profile parabolic. Snout  $2\frac{1}{5}$  in head; eye  $4\frac{1}{3}$ ; inter-orbital  $4\frac{1}{3}$ . Lateral line 27, 2 scales above, 5 below. D. VIII - 8; A. 7. Dusky reddish brown. Scales narrowly edged darker. Head and fins, except pectoral, black. Pectoral darker than body. (de Vis.)

An imperfectly described and little known species.

Eupeneoides filifer Ogilby Proc 129  
Eupeneoides filifer Ogilby, Proc. Royal Soc. Queensland, vol. 23, Dec. 20, 1910, p. 95.  
 Off Gloucester, South Queensland.

The description of this species I have been unable to consult.



2354

Leiognathus stercorarius Evermann  
and Seale, Bull. Bur. Sci. Fisher.,  
vol. 26, p. 67, fig. 6, 1906 (1907)  
(type locality, Buluan, Philippines).  
— Jordan and Richardson, Bur.  
Sci. Pub., Manila, vol. 1, p. 22,  
1910 (reference). — Fowler and  
Bean, Proc. U. S. Nat. Mus., vol.  
62, art. 2, p. 24, 1922 (reference). —  
Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 79, p. 273, 1927  
(Vigan; paratype).

Macilentichthys stercorarius Whitley,  
Mem. Queensland Mus., vol. 10, pt. 2,  
p. 115, March 30, 1932 (reference).



beyond, nearly straight. Dorsals 2, first short and second with long base. Anal with 1 or 2 small spines, like soft dorsal. Caudal emarginate, lobes rounded. Pectorals normal. Ventrals with spine and 5 rays, thoracic, nearly scaleless.

Shore fishes of small or moderate size, living in the Indo-Pacific and valued as food. In several respects they approach the Sciaenidae. The rather few species were listed and their generic divisions best determined by Gill in 1861. These results, with slight modification, are followed in the present work.



Depth  $2\frac{3}{4}$  to 3; head  $3\frac{1}{2}$  to  $3\frac{5}{6}$ , width 2 to  $2\frac{1}{8}$ . Snout  $2\frac{7}{8}$  to 3 in head; eye  $2\frac{2}{3}$  to  $3\frac{1}{8}$ , greater than snout in young to equal with age, greater than interorbital in young to equal with age; maxillary reaches eye, expansion 3 to  $3\frac{1}{4}$  in eye, length  $2\frac{2}{5}$  to  $2\frac{1}{2}$  in head; interorbital  $2\frac{3}{4}$  to  $2\frac{4}{5}$ , low, with low median beel. Gill rakers 7 or 8 + 11 to 13, lanceolate,  $\frac{1}{2}$  of gill filaments, which 2 in eye.

Tubular scales 40 to 42 in lateral line to below last dorsal rays, little less arched than dorsal profile of back. Scales very caducous, apparently present on cheeks, chest and breast.



D. VIII, 16, I, second spine  
 sometimes elongated, reaches  
 middle of <sup>soft</sup> dorsal or beyond,  
 $2\frac{1}{5}$  to  $2\frac{3}{5}$  in fish without caudal;  
 A. III, 14, I, third spine  $1\frac{2}{3}$  to  $1\frac{3}{4}$   
 in head; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , well  
 forked; least depth of caudal  
 peduncle  $4\frac{1}{3}$  to  $4\frac{2}{5}$ ; pectoral  
 $1\frac{2}{3}$  to  $1\frac{3}{4}$ , rays II, 14; ventral  
 rays I, 5, fin  $2\frac{1}{3}$  to  $2\frac{2}{5}$  in head.

Back gray down to level of  
 eye, mottled with deeper brown  
 or gray blotches or spots, fewer,  
 larger and more distinct in  
 young examples. Sides below  
 and under surface silvery  
 white. Iris white. Snout above  
 upper lip with blackish brown  
 bar. Fins pale, with gray black  
 line along bases of dorsals.



2357

East Indies, Siam, Philippines,  
Formosa, China Sea. Equula  
parviceps Valenciennes may be the  
present species. It is based on  
an example 115 mm long. According  
to Sauvage it shows: Depth  
 $2 \frac{2}{5}$ ; head 4, Snout 3 in head;  
eye 3. Coloration uniform.



2358

57 examples. Abugog, Leyte.  
July 26, 1909. Length 41 to 74 mm.

One example. Balayan Bay, Luzon.  
January 19, 1909. Length 98 mm.

Three examples. Cabugao River,  
Cataanduanes Island. June 9,  
1908. Length 32 to 36 mm.

21186. Catbalogan, Samar.  
April 15, 1908. Length 97 mm.

104 examples. Cavite, Luzon.  
July 31, 1908. Length 20 to 44 mm.

12834. Cavite and San Roque  
markets. June 27, 1908. Length 55 mm.

2692. D. 5302. China Sea (lat.  $21^{\circ}42'$   
N., long.  $114^{\circ}50'$  E.), vicinity Hong Kong.  
In 38 fathoms. August 9, 1908.  
Length 68 mm.



1112

9946. Loc Carr Island.  
January 7, 1910 Length 200 mm.  
8702. Midway Island, in reefs.  
February 24, 1909. Length 163 mm.

51092 U.S.N.M. Hawaiian Islands.  
Bureau of Fisheries (No. 03917). Length  
230 mm.

52664 U.S.N.M. Hawaiian Islands.  
Bureau of Fisheries (No. 03965). Length  
286 mm.

55511 U.S.N.M. Honolulu. Albatross  
Collection. Length 154 mm.

71675 U.S.N.M. Kapa, Oahu, Rii Kii.  
Albatross Collection. Length 196 to 240 mm.  
2 examples.

52993 A.N.S.P. Delagoa Bay, Portuguese  
East Africa. H.W. Bell Marley. July 1923.  
Length 122 mm.



2359

Six examples. D. 5303. China Sea  
(lat.  $21^{\circ}44'N.$ , long.  $114^{\circ}48'E.$ ), vicinity  
of Hong Kong. In 34 fathoms. August 9,  
1908. Length 52 to 73 mm.

One example. D. 5361. Corregidor  
Light, S.  $89^{\circ}W.$ , 7.2 miles (lat.  $14^{\circ}24'15''N.$ ,  
long.  $120^{\circ}41'30''E.$ ), Manila Bay.  
In 12 fathoms. February 8, 1909.  
Length 93 mm.

Five examples. Hinunangan Bay,  
Leyte. July 30, 1909. Length 32 to 62 mm.  
7911. Manila market. March 17,  
1908. Length 33 mm. Depth  $2\frac{1}{4}$ .

Four examples. Manila market.  
December 12 - 18, 1907. Length 69 to 98 mm.

<sup>16394</sup>  
Six examples. Mansalay, Mindoro.  
June 4, 1908. Length 36 to <sup>71</sup>53 mm.

42 examples. Mantaguin Bay,  
Palawan. April 1, 1909. Length 27 to 64 mm.  
6223. Mantaguin Bay. April 2, 1909.  
Length 60 to 96 mm. Ten examples.



pectoral fin. Behind this spot ~~usually~~ usually a yellow elongated area extending 5 or 6 scales close above and along lateral line. Some <sup>preserved</sup> specimens show an obscure slightly darker saddle behind soft dorsal at front of caudal peduncle and another posterior. Fins all pale or dull brown. Membranes of spinous dorsal slightly darker terminally. Soft dorsal sometimes with large blackish brown shade anteriorly basally and fin otherwise with 5 or 6 dark horizontal bands.

Zanzibar, Mauritius, Portuguese East Africa, East Indies, Philippines, Riu Kiu, Hawaii.



Three examples. Mariveles Bay,  
June 27, 1909. Length 18 to 40 mm.

One example. Matnog Bay.  
May 31, 1909. Length 105 mm.

20445. Naito, Luzon, June 19,  
1909. Length 84 mm.

5369, 5370. Oton market, Iloilo.  
March 30, 1908. Length 92 to 96 mm.

58 examples. Paluan Bay.  
December 11, 1908. Length 38 to 113 mm.

~~Three~~<sup>22</sup> examples. Port Jamelo, Luzon.  
~~December~~ July 13, 1908. Length 23 to 120 mm.

Ten examples. Port Jamelo.  
July 12, 1908. Length 27 to 90 mm.

Three examples. Port San Vicente.  
November 18, 1908. Length 21 to 46 mm.

Seven examples. River at Pasacao,  
Luzon. March 9, 1909. Length 90 to 92 mm.

26 examples. Sangley Point, Cavite,  
Luzon. March 23, 1908. Length 31 to 74 mm.



of lateral line arborescent. Scales with 5 or 6 basal radiating striae; 150 to 184 apical denticles, with 13 to 15 transverse series of basal elements; circuli very fine.

D. VIII - I, 8, I, third spine  $1\frac{1}{3}$  to  $1\frac{2}{3}$  in head, first branched ray  $2\frac{1}{5}$  to  $2\frac{7}{8}$ ; A. II, 6, I, first branched ray  $2\frac{1}{6}$  to  $2\frac{3}{4}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ , deeply forked, lobes pointed; least depth of caudal peduncle  $2\frac{7}{8}$  to  $3\frac{1}{5}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ; ventral  $1\frac{1}{10}$  to  $1\frac{1}{3}$ .

Pale brown generally, slightly lighter below. Iris yellowish brown, narrow golden circle around pupil. Barbels pale brown. A lateral line blackish brown blotch slightly larger than eye or extending over 3 or 4 scales; variably just before or nearly entirely behind tip of depressed



2361

12636. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 111 mm.

23 examples. Sirinao Island, Hakoda Bay near Alfonso XIII. December 30, 1908. Length 39 to 60 mm.

One example. D. 5209. Taratara Island (N.), S.  $53^{\circ}$  W., 1.80 miles (lat.  $11^{\circ}45'25''$  N., long.  $124^{\circ}48'05''$  E.), off western Samar. In 20 fathoms. April 14, 1908. Length 95 mm.

9191. Tilig, Lubang Island. July 14, 1908. Length 32 to 128 mm. Seventy examples. Only few adults with elongate second dorsal spine. Young with few large dark blotches along back in 2 series.

Four examples. Ulugan Bay near mouth of Baheli River, Palawan. December 28, 1908. Length 63 to 82 mm.



24 1109  
Depth  $3\frac{1}{2}$  to  $3\frac{2}{3}$ ; head 3 to  $3\frac{2}{5}$ ,  
width  $1\frac{4}{5}$  to  $2\frac{1}{4}$ . Snout  $1\frac{3}{5}$  to  $1\frac{5}{6}$   
in head; eye  $4\frac{2}{3}$  to 6,  $2\frac{1}{2}$  to  $3\frac{2}{3}$   
in snout,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in interorbital;  
maxillary reaches  $\frac{2}{3}$  to  $\frac{4}{5}$  to eye,  
expansion equals to  $\frac{1}{8}$  greater than  
eye, length  $2\frac{2}{3}$  to  $2\frac{3}{4}$  in head;  
barbels reach opposite upper hind  
edge of preopercle, length  $1\frac{1}{3}$  in  
head; teeth uniserial, rather large,  
short, conic; interorbital  $3\frac{1}{8}$  to  
 $3\frac{1}{2}$ , broadly convex. Gill rakers  
7 + 24, lanceolate, length  $1\frac{2}{5}$  in  
gill filaments which  $1\frac{1}{8}$  in eye.

Scales 27 or 28 in lateral line  
to caudal base and 2 or 3 on latter;  
3 above, 6 below, 13 or 14 predorsal  
forward opposite nostril; 3 rows  
of ~~sc~~ on cheek below eye. Tubes



2362

One example. Varadero Bay.  
July 23, 1908. Length 65 mm.

U.S.N.M., No. 55906. Bulaw,  
Lorogon. Bureau of Fisheries  
(3591 [18687]). Length 163? mm.  
Type of Leiognathus stercorarius.



Upeneus brandesii Bleeker, Natuurh.  
Tijdschr. Nederland. Indië, vol. 2, 1851,  
p. 236, Banda Neira. + Günther, Cat.  
Fishes Brit. Mus., vol. 1, 1859, p. 407  
(compiled).



2363

U. S. N. M., No. 55920. Buluan,  
Sorsogon, Luzon. Bureau of  
Fisheries (3589 [18687]). C. J.  
Pierson. Length 103 mm. Para-  
type of Leiognathus stercorarius.  
Though the second dorsal spine  
is  $1\frac{2}{5}$  in the head, it shows the  
end broken off so that it  
was evidently much larger.  
I think the elongate translucent  
area, studded with dark points,  
on the middle of the side below  
the body axis is probably due  
to the effect of preservation.

U. S. N. M., No. 76609. Takao,  
Formosa. Dr. F. Baker. Length  
68 to 135 mm. Seven examples.



A. N. S. P., one example, Bulan.  
Bureau of Fisheries.  
Paratype of Leiognathus stercorarius.

A. N. S. P., seven examples, Vigan.  
1923. Rev. Joseph Clement. Purchased.



2365

Macilentichtys elongatus (Günther)

Egymula elongata Günther, Ann.  
Mag. Nat. Hist., ser. 4, vol. 14, p.  
369, November 1, 1874 (type  
locality, North Celebes). — Meyer,  
Anal. Soc. Españ. Hist. Nat., Madrid,  
vol. 14, p. 26, 1885 (North Celebes).

Leiognathus elongatum Smith and  
Pope, Proc. U. S. Nat. Mus., vol. 31,  
p. 467, fig. 2, September 24, 1906  
(Ragothima) [as a new species].

— Jordan, Tanaka, Snyder,  
Journ. College Sci. Tokyo, vol. 33,  
p. 132, fig. 92 (copied), 1913  
(reference).



Cover 29

Upeneus caeruleus (Day)

Upeneoides caeruleus Day, Proc. Zool. Soc. London, 1868, p. 194. Madras; Fishes of India, pt. 1, 1875, p. 121; Fauna British India, Fishes, vol. 2, 1889, p. 26.

Depth 4 to 4 1/2 in total; head 4 1/2 to 5. Eye 3 1/2 in head, 1 in snout, 1 in interorbital; maxillary reaches 1/3 in eye; barbels not quite reaching opposite preopercle angle; teeth in fine villiform bands in jaws, single row on vomer and palatines; interorbital flat; opercle with 2 spines.

Scales ctenoid, none on preorbital; 32 to 34 in lateral line, 3 above, 7 below. Lateral line tubes rather long and bifurcate in first portion, branches subsequently short and mostly spring from its upper side.



2366

Macilentichthys elongatus Whitley,  
Mem. Queensland Mus., vol. 10,  
pt. 2, p. 115, March 30, 1932  
(reference).

Macilentichthys popei Whitley,  
Mem. Queensland Mus., vol. 10, pt.  
2, p. 115, March 30, 1932 (on  
Smith and Pope).



1218  
6 dark bars across each caudal lobe. <sup>one 13</sup>  
taeniopterus.

d.<sup>3</sup> Bright yellow median lateral band from eye to caudal; dorsals and upper caudal lobe with alternate yellowish and blackish bands.  
moluccensis.

d.<sup>4</sup> Bright yellow band from eye to caudal and 1 from pectoral axil to caudal, which uniform.  
sulphureus.

d.<sup>5</sup> Four or 5 longitudinal yellow bands on sides; caudal with 4 to 6 oblique black bands on each lobe.

e.<sup>1</sup> Scales 32 to 34 in lateral line to caudal base.

vittatus.

e.<sup>2</sup> Scales 38 or 39 in lateral line to caudal base.

arge.

c.<sup>2</sup> Head and body with black spots, also ventrals; first dorsal black with pale spots; each caudal lobe with 4 to 6 oblique dark bars. trigula.



Depth  $4\frac{1}{3}$ ; head  $3\frac{2}{3}$ , width  $2\frac{1}{10}$ . Snout 3 in head; eye  $3\frac{1}{8}$ , subequal with snout, or inter-orbital; maxillary reaches opposite front eye edge, length  $2\frac{3}{4}$  in head; interorbital  $2\frac{4}{5}$ , low, but slightly convex; supra-orbital ridge entire. Gill rakers  $5+13$ , lanceolate,  $\frac{3}{5}$  of gill filaments, which  $1\frac{7}{8}$  in eye.

Scales very caducous, most all fallen, about 42? pores in lateral line, which apparently complete to caudal base. Cheek apparently scaly.

D. VIII, 16, second spine  $1\frac{4}{5}$  in head, first ray 4; A. III, 14, second spine  $2\frac{1}{2}$ ; caudal  $1\frac{1}{4}$ ?, forked; least depth of caudal peduncle  $5\frac{2}{5}$ ; pectoral  $1\frac{1}{2}$ , rays I, 15; ventral I, 5, fin  $2\frac{1}{4}$  in head.



Drab, paler below and clouded or irregular darker markings on back. Dark or blackish brown bar on side of snout and back below nostrils. Small dark spots on mandible and opercle, also breast and belly. Iris gray. Fins light or pale brownish. Inner pectoral base studded with blackish dots. Dark brown line along bases of dorsals.

East Indies, Japan.



U. S. N. M., No. 55613. Kagoshima,  
Japan. Dr. H. M. Smith. Length 90 mm.  
Type of Leiognathus elongatus  
Smith and Pope, also of  
Macilentichtys popei Whitley.



traces of vertical, parallel, obscure  
vertical lines or bars. Spinous  
dorsal grayish, with terminal portion  
largely anteriorly broadly dark. Soft  
dorsal pale or grayish, with front and  
upper edges dusky. Caudal gray,  
darker marginally, <sup>especially above and below.</sup> Other fins pale.

Red Sea, East Africa, India, East  
Indies, Philippines, Riu Kiu, Micronesia,  
Polynesia. This species is quite variable  
as has already been discussed by Fowler  
(1918). Preserved examples often show  
a diffuse dark blotch below the soft  
dorsal. A number of our examples have  
the upper edge of <sup>second</sup> dorsal and caudal, also  
lower edge of anal and caudal,  
narrowly whitish.



Genus Secutor <sup>Gistel</sup> ~~Bonaparte~~ 2370

Secutor Gistel, Handb. Nat.  
Thierr. höh. Schule, p. IX, 1848.  
(Type Egula <sup>Zeus</sup> insidiator Bloch  
monotypic.)

Deveximentum Fowler, Journ.  
Acad. Nat. Sci. Philadelphia,  
ser. 2, vol. 12, p. 517, 1904. (Type  
Zeus insidiator Bloch, orthotypic.)



2, 1889, p. 27.  $\frac{1}{m}$  Ishikawa and Matsuura,  
Prelim. Cat. Mus. Tokyo, 1897, p. 54.  $\frac{1}{m}$   
Rutter, Proc. Acad. Nat. Sci. Philadelphia,  
1897, p. 71 (Swatow).  $\frac{1}{m}$  Pellegrin, Bull.  
Soc. Zool. France, vol. 30, 1905, p. 84  
(Baie de Alang, Tonkin).  $\frac{1}{m}$  Snyder, Proc.  
U. S. Nat. Mus., vol. 42, 1912, p. 416 (Misaki,  
Shimizu, Kagoshima), p. 503 (Okinawa).  
 $\frac{1}{m}$  Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 62, 1922, p. 43 (Takao).  $\frac{1}{m}$  Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1927,  
p. 285 (Orani, Orion).

Lipeneus bensasi Bleeker, Nederland.  
Tijdschr. Dierk., vol. 4, 1874, p. 118 (China).  
 $\frac{1}{m}$  Snyder, Proc. U. S. Nat. Mus., vol. 32,  
1907, p. 97, fig. 3 (Wakanoura, Tokyo,  
Nagasaki).  $\frac{1}{m}$  Steindachner, Denkschr.  
Abad. Wiss. Wien, Math.-naturwiss.  
Classe, vol. 71, pt. 1, 1907, p. 137 (Gischin,  
South Arabia).  $\frac{1}{m}$  Franz, Abhandl. Kon.



2371

Body greatly compressed, elongate to elongate ovoid. Head small, compressed. Snout short. Eye moderate. Mouth very small, oblique, when fully extended forms horizontal or upward directed tube. Closed mandible nearly vertical. Ventral profile of body much more convex than dorsal.

Two species in the Indo Pacific, remarkable for the reversed or superior protrusion of the mouth.



# Analysis of Species

a.<sup>1</sup> Depth 2; scales minute, about 50 in longitudinal series; no markings on head.  
insidiator.

a.<sup>2</sup> Depth  $1\frac{1}{2}$  to  $1\frac{3}{5}$ ; scales moderate, about 30 in longitudinal series; black line from front eye edge to chin; opercle with black spot.

ruconius.



13094. Kapoporang Island,  
Macassar Strait. December 28, 1909.  
Length 124 mm.

13125. Riwati Harbor, Makyan  
Island, Molucca Passage. November  
28, 1909. Length 163 mm.

14340. Tobea Island, Buton Strait.  
December 14, 1909. Length 155 mm.



Secutor insidiator (Bloch)

Zeus insidiator Bloch, Naturges.  
Ousland. Fische, pt. 3, p. 41, pl.  
 192, figs. 2-3, 1787 (type locality,  
Surate, India). — Bonnaterre,  
Tabl. Ichth., p. 72, pl. 89, fig. 371,  
 1788 (copied). — Gmelin, Syst. Nat.  
Lin., pt. 1, p. 1221, 1789 (fresh waters  
 of India). — Walbaum, Artedii  
Pisc., vol. 3, p. 400, 1792 (copied).  
 — Forster, Fauna Indica, p. 14,  
 1795. — Lacépède, Hist. Nat. Poiss.,  
 vol. 4, pp. 571, 572, 1802 (Malabar;  
Surate). — Shaw, General Zoology,  
 — Schneider, Syst. Ichth. Bloch,  
 p. 95, 1801 (copied).  
 vol. 4, p. 284, pl. 41, 1804.



Zool. France, vol. 39, 1914, p. 224 (Fort  
Dauphin, Madagascar). <sup>1</sup>/<sub>m</sub> Gilchrist  
and Thompson, Ann. Durban Mus., vol.  
1, no. 4, 1917, p. 351 (compiled).

Sciaena dussumieri Bleeker, Verhandel.  
Kon. Akad. Wetensch. Amsterdam, vol. 14,  
no. 3, 1874, p. 56 (Sumatra, Singapore,  
Banka, Java, Amboina); Atlas Ichth.  
Ind. Néerland., vol. 9, 1877, pl. (4) 387,  
fig. 4. <sup>1</sup>/<sub>m</sub> Fowler, Copeia, no. 58, June 18, 1918,  
p. 64 (Philippines); Proc. Acad. Nat. Sci.  
Philadelphia, 1918, p. 43 (Philippines). <sup>1</sup>/<sub>m</sub>  
Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 63, 1923, p. 171 (Philippines); vol. 71,  
1927, p. 8 (Benkoelen, Sumatra). <sup>1</sup>/<sub>2m</sub> Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1927, p.  
286 (Orion; Philippines).

Sciaena dussumieri Fowler, Journ. Bombay  
Nat. Hist. Soc., vol. 30, no. 4, November 1926,  
<sup>778</sup>  
p. 12 (Bombay). (Misprint.)



Egmula insidiatrix Valenciennes, <sup>2374</sup>

Hist. Nat. Poiss., vol. 10, p. 98, 1835  
(Pondicherry; Malabar).

Nat. Geneesk. Arch. Ned. Ind., vol. 2, p. 518, 1845 (Batavia).

— Bleeker, Verh. Batavia. Genoot.

(Madura), vol. 22, p. 5, 1849 (Kammar).

— Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1133, 1849 (1850) (Pondicherry).

✓ Nat. Tijds. Ned. Indie, vol. 2, p. 210, 1851 (Boeloeckomba); <sup>— Jerdon, Mys. Journ. Lit. Sci., p. 138, 1851. — Bleeker,</sup>

1851 (Boeloeckomba); vol. 5, p. 154,

1853 (Macassar); Verh. Batavia.

Genoot. (Nat. Ich. Bengal), vol. 25,

p. 46, 1853 (reference); (Makreel),

vol. 24<sup>5</sup>, p. 84, 1854 (Batavia);

Samarang; Rembang; Sarobaja;

Patjitau; Padang); Nat. Tijds.

Ned. Indie, vol. 6, p. 375, 1854

(Amber); Act. Soc. Sci. Ind. Neerl.,

vol. 1, no. 5, p. 75, 1856 (Lemboina);

vol. 2, no. 7, p. 5, 1857 (Lemboina);

Nat. Tijds. Ned. Indie, vol. 17,

p. 143, 1858-59 (Boeloeing, Bali);

vol. 20, p. 141, 1859-60 (Badjoa, Boni).



(1652d)

72691 U.S.N.M. Java. Bryant and Palmer. Length 135 mm.

<sup>52990</sup>  
~~example~~ A.N.S.P. Bombay, India.

Prof. F. Hallberg. 1924. Purchased.

<sup>Length</sup>  
24634 A.N.S.P. Padang, Sumatra.

A.C. Harrison and H.L. Miller. Length 148 mm.



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vol. 2, p. 504, 1860 (Sumatra;  
Malay Peninsula; China). —

Kner, Reise Novara, Fische, p.  
169, 1865 (<sup>Manila; Hong Kong;</sup> Tahiti).

— Jouan, Mém. Soc. Sci. Nat.  
Cherbourg, ser. 2, vol. 3, p. 266,

1867. — Peters, Monatsb. Akad. Wiss. Berlin, p.  
262, 1868.

— Day, Fishes of India, pt. 2, p.  
242, 1876. pl. 51 C, fig. 5, 1876. —

Martens, Preuss. Exped. Ost Asien,  
vol. 1, p. 391, 1876 (Manila). — Károli,

Sermess. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore;  
Canton; Macao; Swatow; Borneo).

— Day, Fauna British India, Fishes, vol. 2, p.  
191, 1889.



cm 1.29

Sciaena dussumieri (Valenciennes)

Umbra dussumieri Valenciennes, Hist. Nat. Poiss., vol. 9, 1833, p. 481. Coromandel.

<sup>1</sup>/<sub>2m</sub> Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 278 (no locality). <sup>1</sup>/<sub>2m</sub> Day, Proc. Zool. Soc. London, 1865, p. 18 (Cochin, Malabar);

Fishes of Malabar, 1865, p. 48; Fishes of India, pt. 2, 1876, p. 183, pl. 43, figs. 2-3; Fauna British India, vol. 2, 1889, p. 110. <sup>1</sup>/<sub>2m</sub>

Pellegrin, Bull. Soc. Zool. France, vol. 30, 1905, p. 84 (Baie de Lilang, Tonkin). <sup>1</sup>/<sub>2m</sub>

Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 25 (Cavite). <sup>1</sup>/<sub>2m</sub> Evermann

and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 87 (San Fabian). <sup>1</sup>/<sub>2m</sub> Jordan and

Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. (Manila). <sup>1</sup>/<sub>2m</sub> Zugmayer,

Abhandl. Kon. Bayer. Akad. Wiss., Math.-physik. Klasse, vol. 26, band 6, 1913, p. 12 (Mekran). <sup>1</sup>/<sub>2m</sub> Pellegrin, Bull. Soc.



— Weber, Siboga Exped., vol. 5<sup>th</sup>, Fische,  
p. 268, 1913 (Lombok).



107

85 to 133 apical denticles with 1 or 2 transverse series of basal elements; ~~maxilla~~ circuli fine.

D. VII - I, 9, I, fourth spine 2 to 2  $\frac{1}{5}$  in total head length, first ray 1  $\frac{2}{5}$  to 1  $\frac{1}{2}$ ; A. II, 8, I, second spine 2  $\frac{1}{2}$  to 2  $\frac{4}{5}$ , first ray 1  $\frac{3}{5}$  to 1  $\frac{2}{3}$ ; caudal 1  $\frac{1}{5}$  to 1  $\frac{1}{4}$ , slightly emarginate behind with lobes rounded; least depth of caudal peduncle 2  $\frac{1}{4}$  to 2  $\frac{2}{5}$ ; pectoral 1  $\frac{2}{5}$  to 1  $\frac{1}{2}$ ; ventral 1  $\frac{3}{4}$  to 2.

Back brown, sides and below greatly paler, often with bright or brassy reflections. Iris pale to gray or neutral gray. Rather obscure brown streak from lower eye down obliquely to angle of preopercle ridge. Usually a more or less distinct and contrasted dusky brown saddle on upper surface of caudal peduncle. Sides usually with



— Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, p. 252, 1907  
(1908) (Manila). — Regan, Ann.  
Durban Mus., vol. 2, p. 459, 1917-20  
(Durban).

Egumla insidiator Jordan and Seale,  
Bull. Bur. Fisher., vol. 26, p. 15, 1906  
(1907) (Cavite); Proc. Haverford  
Acad. Sci., vol. 10, p. 8, 1905  
(Hong Kong).  
Proc. U. S. Nat. Mus., vol. 28, p. 777, 1905 (regress).



1452

Sciaena macroptera Fowler, Journ.  
Acad. Nat. Sci. Philadelphia, series 2,  
vol. 12, 1904, p. 530 (Padang).  $\frac{1}{2}$  Fowler  
and Bean, Proc. U. S. Nat. Mus., vol.  
63, 1923, p. 18 (Sumatra).  $\frac{1}{2}$  Fowler,  
Journ. Bombay Nat. Hist. Soc., vol.  
25, 1925, p. 32 (Bombay).

Johnius macropterus Fowler, Proc.  
Acad. Nat. Sci. Philadelphia, 1929 (1930),  
p. 652 (Padang specimen). (Error.)



Leiognathus insidiator Bleeker,  
Ned. Tijds. Dierk., vol. 2, p. 286,  
1865 (reference).

— Bean and Weed, Proc. U. S.  
Nat. Mus., vol. 42, p. 604, 1912  
(Batavia).

— Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 6, p. 316, 1931  
(Mias; Tondong Priok; Lombok;  
Tanette, Celebes).

Leiognathus insidiatrix Jordan  
and Starke, Ann. Carnegie Mus.,  
vol. 11, ~~part~~ nos. 3-4, p. 444,  
November 5, 1917 (Ceylon).

Leiognathus insidiator Barnard, Ann.  
South Afric. Mus., vol. 21, pt. 2,  
p. 625, 1927 (Katal; Delagoa Bay; Chinde).



<sup>129</sup>  
Sciaena macroptera (Bleeker)

(p. 1650?)

1057

Ambrina macropterus Bleeker, Natuurk.  
Nijdschr. Nederl. Indie, vol. 4, 1853, p. 254.  
Prismar, Sumatra.

Ambrina macroptera Günther, Cat.  
Fishes Brit. Mus., vol. 2, 1860, p. 279  
(compiled). <sup>1</sup>/<sub>m</sub> Day, Fishes of India,  
pt. 2, 1876, p. 182 (Madras); Fauna  
British India, Fishes, vol. 2, 1889, p. 108  
(Madras). <sup>1</sup>/<sub>m</sub> Jordan and Starke, Jordan  
Ann. Carnegie Mus., vol. 11, 1917, p. 454  
(Ceylon). <sup>1</sup>/<sub>m</sub> Barnard, Ann. South Afr.  
Mus., vol. 21, pt. 2, 1927, p. 581 (Natal).

Sciaena macropterus Bleeker, Verhandel.  
Kon. Akad. Wetensch. Amsterdam, no. 3,  
vol. 14, 1874, p. 60 (Sumatra; Nias);  
Atlas Ichth., vol. 1, 1877, pl. (1) 384,  
fig. 5.



2379

Deceyimentum insidiator Fowler,  
Journ. Acad. Nat. Sci. Philadelphia,  
ser. 2, vol. 12, p. 517, 1904  
(Padang); Copeia, no. 58, p. 63,  
June 18, 1918 (Philippines).

Secutor insidiator Fowler, Journ.  
Bombay Soc. Nat. Hist., vol. 32,  
no. 2, p. 258, October 20, 1927  
(Bombay); Proc. Acad. Nat. Sci.  
Philadelphia, vol. 79, p. 273, 1927  
(Orani; Orion; Philippines);  
Mem. Bishop Mus., vol. 10, p. 154,  
1928 (compiled); Proc. Acad. Nat.  
Sci. Philadelphia, vol. 86, p.  
73, 1934 (Sanoer, Bali); p. 453  
(Durban, Natal); vol. 87, p. 144,  
1935 (Bangkok; Paknam).



below, back and head above dusted with dusky brown. Opercle largely dusky. Iris slate. Barbel pale or whitish. Spinous dorsal largely blackish terminally. Soft vertical fins with gray on outer portions. Paired fins whitish.

India, Ceylon, Malayan Peninsula, East Indies, Philippines, Indo China, Amoy.

D. 5461. Caringo Island (W.),  $12^{\circ}$  N., 4.9 miles ( $13^{\circ} 57' 42''$  N.,  $123^{\circ} 06' 42''$  E.). June 14, 1909. Length 115 to 138 mm.

15 examples.

19759 [1526]. Manila market. April 20, 1909. Length 178 mm.

17549. Sorogon market. March 12, 1909.

Length 171 mm.

11830. Sandakan market, Borneo. March 2, 1908. Length 104 mm.

56210 U.S.N.M. San Fabian, Philippines. Bureau of Fisheries (3265). Length 123 mm.



Deveymientum rucanum (not  
Buchanan-Hamilton) ~~Cope~~ Fowler,  
Copeia, 20.58, p. 63, June 18, 1918  
(2 Philippine examples).



each jaw; interorbital  $4\frac{2}{5}$  to  $4\frac{1}{2}$ , slightly convex; preopercle edge denticulate. Gill rakers  $6+10$ , low, short points,  $1\frac{1}{2}$  in gill filaments, which  $2\frac{1}{4}$  in eye.

Scales 45 in lateral line to caudal base; 7 above, 8 below, 28 predorsal; anteriorly in lateral line each tube with 2 short branches. Scales with 11 basal radiating striae; 25 or 26 apical denticles, with 7 or 8 transverse series of basal elements; circuli fine.

D. XI, 26, I or 27, I, second spine  $2\frac{1}{3}$  to  $2\frac{1}{5}$  in head, first ray  $2\frac{1}{4}$  to  $2\frac{2}{5}$ ; A. II, 7, I, second spine  $2\frac{1}{3}$  to  $2\frac{2}{5}$ , first ray  $1\frac{3}{4}$  to  $1\frac{7}{8}$ ; caudal  $1\frac{1}{10}$  to  $1\frac{1}{8}$ , cuneate; least depth of caudal peduncle 3 to  $3\frac{1}{4}$ ; pectoral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ .

Light brown generally, little paler



Depth  $2\frac{1}{10}$  to  $2\frac{1}{5}$ ; head  $3\frac{1}{5}$  to  $3\frac{3}{4}$ , width  $1\frac{7}{8}$  to  $2\frac{1}{6}$ . Snout 3 to  $3\frac{1}{4}$  in head from snout tip; eye 3 to  $3\frac{1}{8}$ , equals snout, greater than interorbital; maxillary reaches  $\frac{3}{4}$  to  $\frac{7}{8}$  to eye, length 2 to  $2\frac{1}{4}$  in head from snout tip; interorbital  $3\frac{1}{3}$  to  $3\frac{2}{5}$ , slightly convex. Gill rakers 7+19, finely lanceolate, long as gill filaments or  $\frac{1}{2}$  of eye.

Scales very minute, mostly fallen. Lateral line nearly parallel with profile of back, reaches middle or little beyond in soft dorsal length.

D. VIII, 16, I, second spine  $1\frac{2}{3}$  to 2 in total head length; A. III, 14, I or 15, I, second spine



3 to  $3\frac{1}{10}$ ; caudal  $1\frac{1}{10}$  to  $1\frac{1}{8}$ ,  
 forked; least depth of caudal  
 peduncle  $5\frac{2}{5}$  to  $5\frac{1}{2}$ ; pectoral  
 $1\frac{1}{4}$  to  $1\frac{1}{2}$ , rays II, 13; ventral  
 rays I, 5, fin  $2\frac{3}{5}$  to 3 in total  
 head length.

Pale brownish in alcohol.  
 Back above median body axis  
 with 12 transverse dusky bars,  
 each formed of 3 or 4 spots.  
 Black streak below eye and  
 along maxillary sheath verti-  
 cally. On trunk and tail  
 below median body axis  
 sprinkling of dusky dots.  
~~Axis~~ Iris silvery gray. Spinous  
 dorsal broadly tipped black.  
 Fins pale, gray on caudal.



Natal, Delagoa Bay, Chinde,  
Madagascar, Seychelles, India,  
Ceylon, Malaya, East Indies,  
Philippines, Tonkin, Polynesia.



Six examples. Catbalogan, Samar.  
April 15, 1908. Length 62 to 88 mm.

5990, 5992. Cavite market,  
Luzon. December 1, 1908. Length 60 to  
84 mm. Depth  $2\frac{1}{4}$  to  $2\frac{3}{5}$ .

Two examples. Cebu market.  
September 4, 1909. Length 47 to 49  
mm.

Five examples. D. 5361. Corregidor  
Light, S.  $89^{\circ}$  W., 7.2 miles (lat.  $14^{\circ}$   
 $24'15''$  N., long.  $120^{\circ}41'30''$  E.),  
Manila Bay. In 12 fathoms.  
February 8, 1909. Length 83 to 93 mm.  
[1143.]

One example. Cotabato, below  
mouth of river, Mindanao Island.  
May 20, 1908. Length 80 mm.

Five examples. Manila Bay, Luzon.  
December 9, 1907. Length 40 to 91 mm.



Analysis of ~~the~~ species 6 ft om <sup>10 ft</sup> <sub>ch</sub>

a. At least one black blotch on the side of the body.

b.<sup>1</sup> Black spot on flanks above pectoral; barbels reach ventrals. pleurospilos.

b.<sup>2</sup> Black spot above end of pectoral, followed by pale blotch below soft dorsal. pleurostigma.

b.<sup>3</sup> Black spot below end of soft dorsal base on side of tail; head and trunk anteriorly above blackish, with pale band from mouth below eye till below spinous dorsal; ventrals black.

b.<sup>4</sup> Black spot on caudal peduncle midway in caudal peduncle length. barberinoides.

b.<sup>5</sup> Black saddle on caudal peduncle above behind soft dorsal base. macronemus.

c.<sup>1</sup> Curved olive lateral bands from snout tip to below end of soft dorsal, median passing through eye along lateral line. spilurus.

c.<sup>2</sup> Reddish, clouded olive brown; broad obscure <sup>only 3 narrow only</sup>



4544. Manila market. December  
12-18, 1907. Length 65 to 98 mm.

19763 [1533]. Manila market.  
April 20, 1909. Length 88 mm.  
Depth  $2\frac{1}{8}$ .

One example. Paluan Bay,  
Mindoro Strait. December 11, 1908.  
Length 53 mm.

One example. Port Janelo, Luzon.  
July 12, 1908. Length 25 mm.

One examples. Port Janelo.  
July 13, 1908. Length 37 to 47 mm.

11465. Kowloon market, China.  
September 8, 1908. Length 100 mm.  
Depth  $2\frac{1}{8}$ .



Species rather numerous in tropical seas. Whitley has described and figured Macleay's type of Upeneus filamentosus, erecting the new subgenus Hogbinia for it chiefly as the third and fourth dorsal spines are elongate. Bleeker's designation<sup>8</sup> (Arch. Néerl. Sci. Nat. Harlem, vol. 11, 1876, p. 334) of Upeneus barberinus Valenciennes for Parupeneus is invalid.



U. S. N. M., no. 57571. Japan.

P. L. Jouy. Length 85 mm.

no. 2202. As Mene maculata.

U. S. N. M., no. 72648, Java.

D. Bryant and W. Palmer.

Length 74 mm. As Leiognathus  
indicator.

U. S. N. M., no. 75939. Japan.

P. L. Jouy. Length 90 to 91 mm.

Three examples. no. 2203.

U. S. N. M., no. 85996. China.

A. Sowerby. Length 52 mm.



A. N. S. P., two examples. Philippines.  
Commercial Museum of Philadelphia.  
As Deverimentum ruconius.

A. N. S. P., four examples.  
Bombay, 1925. Prof. F. Hallberg.  
Purchased. Length 57 to 69 mm.



2388

Secutor ruconius (Buchanan-Hamilton)

Chanda ruconius Buchanan-Hamilton,  
Fishes of Ganges, pp. 106, 371, pl. 12,  
fig. 35, 1822 (type locality, Ganges  
estuaries).

Equula ruconius Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 79, 1835 (copied).

— Bleeker, Verh. Batavia. Genoot.  
(hal. Ichth. Bengal), vol. 25, p. (46) 96,  
1853 (Hooghly River, Calcutta). —

Day, Fishes of India, pt. 2, p. 292, ~~18~~  
pl. 51C, fig. 4, 1876 (Calcutta); Fauna  
British India, Fishes, vol. 2, p. 192, 1889.

— Muncker, Mitteil. naturh. Mus.  
Hamburg, vol. 21, p. 157, 1904 (Kuala Selangor).

— Steindachner, Denks. Akad. Wiss. Wien,  
math. naturw. Kl., vol. 11, pt. 1, p. 144, 1907  
(Gischin, South Arabia).



1447

Sciaena russeli Fowler and Bean, Proc.  
U. S. Nat. Mus., vol. 63, 1923, p. 17  
(Philippines).

Umbra kuhlii Cuvier, Hist. Nat.  
Poiss., vol. 5, 1830, p. 170. Java.

Johnius kuhlii Bleeker, Nederl.  
Tijdsch. Dierk., vol. 2, 1865, p. 56  
(Amoy).

Sciaena indica (Kuhl and Van Hasselt)  
Cuvier, Hist. Nat. Poiss., vol. 5, 1830, p.  
179. Java. (name in text.)

Depth  $3\frac{1}{4}$  to  $3\frac{1}{3}$ ; head 3 to  $3\frac{1}{8}$ , width  
 $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout  $3\frac{2}{5}$  to  $3\frac{3}{4}$  in head;  
eye  $3\frac{1}{2}$  to 4, subequal with snout,  
slightly greater than interorbital;  
maxillary reaches  $\frac{3}{5}$  to  $\frac{2}{3}$  in eye,  
expansion  $2\frac{2}{5}$  to  $2\frac{3}{4}$  in eye, length  
 $2\frac{3}{4}$  to  $2\frac{4}{5}$  in head; mandibular  
barbel  $1\frac{2}{5}$  in eye, 2 pores each side;  
bands of minute villiform teeth in



Egmula ruconia Jordan and Seale,  
Bull. Bur. Fisher., vol. 27, p. 15,  
1907 (1908) (Cavite). — Jordan and  
Richardson, Bur. Sci. Pub., Manila,  
vol. 1, p. 22, 1910 (reference). —  
Seale, Philippine Journ. Sci., vol.  
5, p. 272, 1910.



Umbrina russellii Lay and Bennett, Zool.  
Bechey's Voyage, 1839, p. 51 (Macao). <sup>1</sup>/<sub>m</sub>  
Duncker, Mitteil. naturh. Mus. Hamburg,  
vol. 21, 1903 (1904), p. 154 (Bandar  
Maharani). <sup>1</sup>/<sub>m</sub> Tirant, Service Océanogr.  
Pêch. Indo Chine, (note 6<sup>e</sup>), 1929, p. 9.

Umbrina russelli Cantor, Journ. Asiatic  
Soc. Bengal, vol. 8, pt. 2, 1849, p. 1053  
(Pinang, Malay Peninsula, Singapore).

→ Umbrina russellii Gorgoza, An. Soc.  
Españ. Hist. Nat. Madrid, vol. 14, 1885,  
p. 73 (Manila).

Sciaena russelli Bleeker, Verhandl. Kon.  
Akad. Wetensch. Amsterdam, no. 3, vol. 14,  
1874, p. 58 (Singapore, Bintang, Banka,  
Java, Madura, Celebes); Atlas Ichth.,  
vol. 9, 1877, pl. (3) 3<sup>te</sup>, fig. 2. <sup>1</sup>/<sub>3</sub> Fowler,  
Proc. Acad. Nat. Sci. Philadelphia, 1927,  
p. 286 (Philippines).



Deveximentum ruconius Fowler,  
Copeia, no. 58, p. 63, June 18, 1918  
(Philippines).

Leiognathus ruconius Weber and  
Beaufort, Fishes Indo Austral.  
Archip., vol. 6, p. 317, fig. 69<sup>(head)</sup>, 1931  
(Bagan Apilipi, Java Sea;  
Tandjong Priok and Samarang,  
Java, Lombok).



17092. Dupon Point, Leyte Island.  
March 17, 1909. Length 181 mm.
10422. East side Verde Island.  
July 22, 1908. Length 184 mm.
14631. Galvaney Island, Ragay Gulf,  
Luzon. March 9, 1909. Length 244 mm.
7676. Sigoso Point, Catanduanes  
Island. June 10, 1909. Length 188 mm.
9203. Hermano Mayor Island.  
May 8, 1909. Length 230 mm.
9923. Inamucan Bay, Mindanao.  
August 9, 1909. Length 154 mm.
4718. Ligpo Point, Balayan Bay.  
January 18, 1908. Length 249 mm.
- 6051, 6052, 6656, 18539, 21034. Little Santa  
Cruz Island. May 28, 1908. Length 173 to 253 mm.
22236. Little Santa Cruz Island.  
May 26, 1908. Length 150 mm.
16946. Mahinog, Camiguin Island.  
August 3, 1909. Length 200 mm.



Secutor ruconius Fowler, Journ.  
Bombay Nat. Hist. Soc., vol. 30, no.  
2, p. 319, January 25, 1925  
(Tuticorin); Proc. Acad. Nat.  
Sci. Philadelphia, vol. 77, p.  
218, 1925 (Delagoa Bay; Natal);  
vol. 79, p. 273, 1927 (Vigan;  
Orion; Philippines); vol. 86,  
p. 454, 1934 (Durban, Natal).



8931, <sup>Lagonoy Gulf.</sup>  
16342 to 16345. Atulayan Island,  
June 18, 1909. Length 147 to 262 mm.

8679. Batan Island. June 22, 1909.  
Length 248 mm.

8730. Batan Island, Caracaran, June 28, 1909. Length 331 mm.

4625. Babuan Island. February 14, 1909.

Length 164 mm.

11705 and 11706. Cagayan Island,  
January 8, 1908. Length 227 to 233 mm.

7866. Cagayan de Jolo. January 8, 1909.  
Length 280 mm.

269. Cagayanes Island. March 31, 1909.  
Length 243 mm.

<sup>13326 and</sup>  
13327. Paxisigan Island, Balabac.  
January 2, 1909. Length <sup>212 to</sup> 234 mm.



Equula interrupta Valenciennes, Hist.  
 Nat. Poiss., vol. 3, p. 102, 1833 (type  
 locality, Pondicherry [understood though  
 not named mentioned]).  
 — Bleeker, Verh. Batavia. Genoot.  
 (Maakreel.), vol. 24, p. 85, 1852  
 (Batavia; Padang); (hal. Ich. Bengal).  
 vol. 25, p. 46, 1853 (reference); Nat.  
 Tijds. Ned. Indie, vol. 7, p. 313, 1854  
 (Anjer); vol. 8, p. 393, 1855 (Amboina);  
 vol. 19, p. 435, 1859 (Sumbawa); vol.  
 22, p. 65, 1860 (Benculen); Act. Soc.  
 Sci. Ind. Neerl. (Sumatra 9), vol. 8,  
 p. 2, 1860 (Benculen). — Günther,  
 Cat. Fish. Brit. Mus., vol. 2, p. 504,  
 1860 (Amboyna; Singapore; China;  
 Port Essington). — Bleeker, Verslag.  
 Kon. Akad. Wet. Amsterdam, vol.  
 12, p. 31, 1861 (Singapore).



in the Indo-Pacific. I have  
greatly ~~confused~~ by most writers  
the characteristic color pattern of  
Günther's excellent figure leaves  
no doubt of the distinctness of  
this species. All of my materials  
agree with this figure.



2393

— Kner, Reise Novara, Fische, p. 169,  
1865 (Java —). — Day, Fishes  
of India, pt. , p. 242, pl. 51C, fig.  
4, 1876. — Macleay, Proc. Linn. Soc.  
South Wales, vol. 6, 550, 1881 (Port Essington).  
New York, p. 183, 1881 (Port Essington).  
— Weber, Siboga Exped., vol. 57,  
Fische, p. 269, 1913 (Lombok).

Equula interrupta Bleeker, Nat.  
Tijds. Ned. Indië, vol. 8, p. 345, 1855  
(Tikoe, Sumatra).

Leiognathus interruptus Bleeker,  
Ned. Tijds. Dierk., vol. 2, p. 290, 1865.  
(reference).



11  
broad blackish brown band from  
soft dorsal base, similarly broad.  
Also third, less distinct blackish  
brown band on caudal peduncle above,  
more or saddle. Spinous dorsal  
pale brown. Soft dorsal dark brown,  
with 4 or 5 longitudinal pale brown  
bands mostly on terminal part of  
fin and each band with narrow  
dark bordering line. Anal like  
soft dorsal only bands 6 or 7 and  
extend horizontally over most of fin.  
Caudal dark brown. Pectoral very  
pale or light brown. Ventral dark  
brown, paler on outer edges and  
basally.

Mauritius, Bourbon, Reunion, India,  
Ceylon, East Indies, Philippines, China,  
Melanesia, Micronesia, Polynesia,  
Hawaii. A widely distributed species



Egnumla profunda de Vis, Proc.  
Linn. Soc. New South Wales, vol. 9,  
no. 3, p. 544, November 29, 1884.  
(type locality, Queensland coast).  
— Saville-Kent, Prelim. Rep. Food  
Fish. Queensland, p. 10, 1889; Great  
Barrier Reef, p. 369, 1893 (reference).

Leiognathus profunda Mc Culloch  
and Whitley, Mem. Queensland Mus.,  
vol. 8, p. 145, 1925 (reference). —  
Mc Culloch, Austral. Mus. Mem.,  
no. 5, p. 213, 1929 (reference).

Secutor profunda Whitley, Mem.  
Queensland Mus., vol. 10, pt. 2,  
p. 115, March 30, 1932 (type).



Tubes in lateral line arborescent. Scales with 5 to 7 basal radiating striae; 103 to 163 apical denticles, with 11 to 14 transverse series of basal elements; circuli fine.

D. VIII - I, 8, I, third spine  $1\frac{1}{3}$  to  $1\frac{2}{5}$  in head; first branched ray  $2\frac{1}{8}$  to  $2\frac{1}{4}$ ; A. II, 6, I, first branched ray  $1\frac{7}{8}$  to  $2\frac{1}{5}$ ; caudal 1 to  $1\frac{1}{4}$ , forked, lobes rounded; least depth of caudal peduncle  $2\frac{1}{3}$  to  $2\frac{2}{3}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{1}{10}$  to  $1\frac{1}{5}$ .

Generally light or pale brown, slightly darker on back. Iris brownish, with yellowish circle around pupil. Barbels pale brown. Broad deep dusky or blackish brown transverse band from greater portion of spinous dorsal base down over trunk behind pectoral and ventral. Second



Depth  $1\frac{2}{3}$  to  $1\frac{7}{8}$ ; head 3 to  $3\frac{3}{4}$ , width 2 to  $2\frac{2}{5}$ . Snout  $3\frac{1}{10}$  to  $3\frac{1}{2}$  in head from snout tip; eye  $2\frac{2}{5}$  to  $2\frac{4}{5}$ , greater than snout or interorbital; maxillary reaches  $\frac{1}{8}$  in eye, length 2 to  $2\frac{1}{2}$  in head from snout tip; interorbital 3 to 4, elevated. Gill rakers 6 + 17 to 19, lanceolate, slightly less than gill filaments or 3 in eye.

Scales 42 to 52 in lateral series; tubes 18 to 20 in line, ending opposite middle of soft dorsal. Scales very small, caducous, mostly over breast. ~~Tubes 18 to~~

D. VIII or IX, 15, I or 16, I, second spine  $1\frac{3}{5}$  to  $1\frac{4}{5}$  in total head length; A. III, 14, I or 15, I, second spine  $2\frac{2}{5}$  to 3; caudal 1,



well forked, lobes pointed; least depth of caudal peduncle  $4\frac{2}{5}$  to 5; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{4}$ , rays II, 12; ventral rays I, 5, fin  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in total head length.

Dull brown generally, sides of head and costal region silvery white. Twelve vertical dark brown streaks on back, irregular or some broken into spots. Dusky streak from lower front eye edge to mandibular articulation. Dark brown line along dorsal bases. Fins all pale.

Arabia, India, Malaya, East Indies, Philippines, China, Formosa, Western Australia, Queensland.



2397

21419. Bacoor, Luzon. June 15,  
1908. Length 53 mm.

One example. D. 5461. Caringo  
Island (W.), N.  $12^{\circ}$  W., 4.9 miles  
(lat.  $13^{\circ}57'42''$  N., long.  $123^{\circ}06'42''$   
E.), east coast of Luzon. In 11  
fathoms. June 14, 1909. Length 72 mm.

Six examples. [1139]. D. 5361.  
Corregidor Light, S.  $89^{\circ}$  W., 7.2 miles  
(lat.  $14^{\circ}24'15''$  N., long.  $120^{\circ}41'30''$  E.),  
Manila Bay. In 12 fathoms.

February 8, 1909. Length 64 to 81 mm.  
One example. Cotabato, below  
mouth mouth of Mindanao River.  
May 20, 1908. Length 73 mm.

One example. Dagupan, Luzon.  
March 19, 1908. Length 47 mm.

Six examples. Lingayen Gulf,  
west coast of Luzon. May 11, 1909.  
Length 28 to 48 mm.



Cmel 30

Genus Pseudupeneus Bleeker

Pseudupeneus Bleeker, Verslagen Med.  
Akad. Wetensch. Amsterdam, vol. 14,  
1862, p. 134. Type Upeneus pragensis  
Valenciennes, monotypic.

Parupeneus Bleeker, Nederland. Tijdschr.  
Dierk., vol. 1, 1863, p. 242. Type  
Mullus trifasciatus Lacépède, monotypic.  
Mullhypeneus Poy, Repert. Fis. Nat.,  
Cuba, vol. 2, 1867, p. 160. Type Mullus  
flavovittatus Poy.

Brachymullus Bleeker, Arch. Néerl.  
Sci. Nat. Harlem, vol. 11, 1875, p. 333.  
Type Upeneus tetrophilus Günther,  
monotypic.

Hogbinia Whitley, Proc. Linn. Soc. New-  
South Wales, vol. 54, pt. 2, May 15, 1929, p.  
92. Type Upeneus filamentosus Macleay,  
orthotypic.



Eighteen examples. Malampaya River, Palawan. December 26, 1908. Length 35 to 68 mm.

Four examples. Manila Bay. December 9, 1907. Length 59 to 68 mm. Even after many years in alcohol these examples have the pleasing delicate iridescent blue and green tints.

4534. Manila market. December 12, 1907. Length 77 mm.

Seven examples. Manila market. December 10 - 18, 1907. Length 69 to 81 mm.

Two examples. Mantaguin Bay, Palawan. April 2, 1909. Length 35 to 41 mm.

20344. Pancol, Malampaya Island, head of highwater. December 25, 1908. Length 46 mm.



1090

elements; circuli very fine.

D. VIII - I, 8, I, first spine  $1\frac{3}{5}$  in head, first ray  $2\frac{2}{3}$ ; A. I, 6, I, spine 4, first ray  $2\frac{3}{4}$ ; caudal 1, deeply forked, slender lobes pointed; least depth of caudal peduncle  $3\frac{1}{5}$ ; pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$ .

Back and head above pale olive brown, sides and below white.

Iris dull yellowish brown. Barbels pale. Fins all dull brown.

Hawaiian Islands.

55516 U. S. N. M. Hawaiian Islands.

Bureau of Fisheries (No. 2561). Length 264 mm. As Mulloides flammeus.



Four examples. Sebatic Island.  
October 1, 1909. Length 33 to 45 mm.

17559 to 17561. Sorogon market.  
March 12, 1909. Length 50 to 59 mm.

One example. Payabas River  
mouth vicinity. February 25, 1909.  
Length 80 mm.

Six examples. Sandakan Bay,  
Borneo. May 2, 1908. Length 34 to  
45 mm.



Depth  $3\frac{3}{4}$ ; head  $3\frac{1}{4}$ , width  $1\frac{7}{8}$ .

Snout 2 in head; eye  $4\frac{4}{5}$ ,  $2\frac{2}{5}$  in snout,  $1\frac{4}{5}$  in interorbital; maxillary reaches  $\frac{7}{8}$  to eye, expansion  $1\frac{1}{4}$  in eye, length  $2\frac{1}{2}$  in head; teeth villiform, in rather narrow bands in jaws, of at least 4 or 5 irregular series; barbels reach hind preopercle edge, length  $1\frac{1}{2}$  in head; interorbital  $3\frac{1}{4}$ , convexly elevated, broadly depressed medially; preopercle entire. Gill rakers  $6+21$ , lanceolate,  $1\frac{3}{5}$  in gill filaments, which  $1\frac{1}{4}$  in eye; 5 above and below as rudiments.

Scales 34 in lateral line to caudal base and 4 more on latter; 3 above, 7 below, 13 predorsal, 3 rows on cheek. Scales with 5 basal radiating striae; 165 apical denticles, with 2 transverse series of basal



U. S. N. M., No. 39847. Singapore.  
Mus. Comp. Zool. Length 54 to 66 mm.  
Three examples. Depth ~~1~~  $1\frac{4}{5}$ .  
As Equula insidiatrix.

U. S. N. M., No. 52021. Negros.  
Dr. B. Dean. Length 23 to 33 mm.  
Six examples. As Equula insidiator.

U. S. N. M., No. 56289. Cavite.  
Dr. G. A. Lung. Length 58 to 65 mm.  
Two examples.

U. S. N. M., No. 85988. China.  
A. Sowerby. Length 28 to 70 mm.  
Two examples.

U. S. N. M., seven examples.  
Colombo, Ceylon. Received September  
30, 1859. Capt. Putnam. Length  
66 to 80 mm.

U. S. N. M., three examples (with  
U. S. N. M., No. 88012). Benboelen,  
Sumatra. November 1925. Lieut. H.  
C. Kellers. Length 28 to 33 mm.



A. N. S. P., three examples.  
Philippines. Commercial Museum of  
Philadelphia.

A. N. S. P., two examples. Natal.  
1922. H. W. Bell Marley.

A. N. S. P., one example. Delagoa  
Bay. 1922. H. W. Bell Marley.

A. N. S. P., one example. Vigan.  
Rev. Joseph Clemens. Purchased.

A. N. S. P., one example. Orion.  
Rev. Joseph Clemens. Purchased.

A. N. S. P., two examples. Tuticorin.  
Madras Fisher. Department. Length  
51 to 73 mm.



2402

Genus Gazza Rüppell

Gazza Rüppell, Neue Wirbelth.  
Fische, p. 3, 1835. (Type Gazza  
equuliformis Rüppell,  
monotypic.)

Body compressed, oblong or  
elevated, dorsal and ventral  
profiles nearly equally convex.  
Head pointed, compressed,  
upper profile straight, ~~straight~~  
snout short. Eye rather  
large, high, nearly median  
in head length. Maxillary  
nearly vertical, reaches below  
eye. Mouth very protractile,  
extended horizontally and  
gape oblique as closed.  
Single row of sharp upper



1-200  
D. VII — 8 or 9, first spine minute  
or wanting, longest equals head behind  
eye center or  $\frac{2}{3}$  body depth; A. 7;  
caudal forked; ventral reaches half  
way to vent, but not quite long as  
pectoral.

Leadon above, dirty white below.  
First dorsal with black tip, whitish  
band along center and badly marked  
one at base. Second dorsal dark,  
with light band along center. Caudal  
ends stained black and black band  
across upper lobe. Paired fins and  
anal yellowish. Length 100 mm. (Day.)

India. Apparently close to  
Upeneus vittatus, but differs in  
plain coloration of body.



teeth, with variable curved canine each side of symphysis; lower teeth series curved, pointed, larger anteriorly, with pair of symphyseal canines and notch between to receive upper canines; size of teeth changing with age and dentition growth. Scales very small, cycloid, absent from head and breast, present on back but deciduous. Lower gill rakers 14 to 16. Lateral line complete, with 60 small sensory tubes. Dorsal single, with 8 spines and 16 rays. Anal with 3 spines and 14 rays. Second dorsal and anal spine longest. Caudal deeply emarginate. Pectoral short. Ventral with spine and 5 rays and axillary scaly pointed flap.



2404

Small coastal fishes of  
the Indian Ocean and  
Indo-Australian region,  
very abundant and living in  
shoals, sometimes entering  
brackish and fresh waters.

Analysis of Species

a.<sup>1</sup> Depth  $1\frac{3}{4}$  to  $1\frac{7}{8}$ . minuta.  
a.<sup>2</sup> Depth 2 to  $2\frac{1}{2}$ . egulaeformis.



Gazza minuta (Bloch)

2405

Scomber minutus Bloch, Nat.  
Insland. Fische, pt. 9, p. 110, pl.  
429, fig. 2, 1795 (type locality,  
Malabar). — Schneider, Syst.  
Ichth. Bloch, p. 36, 1801  
(Tranquebar).



dark blotches and sides with dark cloudings. Dusky blotch, more or less conspicuous, about size of eye, at suprascapula region. Iris brown. Spinous dorsal neutral blackish. Soft dorsal, anal and caudal dark brown. Paired fins pale basally, neutral brown terminally.

Malabar, Madagascar, India, East Indies, Philippines, Indo China, China. Umbrina fuscolineata Bon Bonde is very closely related, evidently synonymous. Barnard says the "chief difference" from Sciæna dussumieri "lies in the lower spinous dorsal, which in dussumieri is much higher, being nearly or quite equal to the depth of the body." Bleeker's figure shows it  $1\frac{1}{3}$ .



Egmula minuta Valenciennes,  
Hist. Nat. Poiss., vol. 10, p. 88, 1835  
(Pondicherry).

Gazza minuta Bleeker, Nat. Tijds.  
red. Indie, vol. 2, p. 210, 1851  
(Boeloeckomba), p. 471 (Rio); vol.  
3, p. 741, 1852 (Boeloeckomba);  
Verh. Batavia. Genoot. (makreel),  
vol. 24, p. 85, 1852 (Batavia);  
(Nat. Ichth. Bengal), vol. 25, p. 46,  
1853 (reference); Nat. Tijds. red.  
Indie, vol. 4, p. 259, 1853 (Priaman  
and Telok betong, Sumatra); vol. 5,  
p. 154, 1853 (Macassar); Act. Soc.  
Sci. Ind. Neerl., vol. 1, no. 3, p. 4,  
1856 (Manado); vol. 2, no. 7, p. 5,  
1857 (Trussan);



interorbital  $3\frac{2}{5}$  to  $3\frac{4}{5}$ , broadly convex.  
Gill rakers 4 + 9, short tubercles,  
rudimentary.

Scales 52 to 57 along lateral line to  
caudal base; tubular scales 43 to 47 in  
lateral line to caudal base and 5 or 6  
more on latter; 8 above, 10 to 12 below,  
28 to 30 predorsal. Scales with 10 to 12  
basal radiating striae, circuli very fine.

D. XI, 23, I or 24, I, third spine  $1\frac{3}{4}$  to  
 $1\frac{7}{8}$  in head, first ray  $3\frac{1}{8}$  to  $3\frac{1}{3}$ ; A.  
II, 7, I, second spine 3 to  $3\frac{4}{5}$ , third ray  
 $1\frac{7}{8}$  to  $2\frac{2}{5}$ ; caudal  $1\frac{3}{5}$  to  $1\frac{7}{8}$ , obtuse,  
little obliquely rounded below; least  
depth of caudal peduncle  $3\frac{3}{4}$  to  $3\frac{4}{5}$ ;  
pectoral  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ; ventral  $1\frac{4}{5}$  to 2.

Above bistre, with soiled or dusky  
appearance, sides generally with  
silvery, violet and bluish reflections.  
Along back 4 or 5 obscure, ill defined,



Nat. Tijds. Ned. Indië, vol. 17,  
p. 148, 1858-59 (Boleling, Bali);  
vol. 19, p. 435, 1859 (Sumbawa);  
vol. 20, p. 198, 1859-60 (Badjoea);  
vol. 22, p. 65, 1860 (Benculen);  
Act. Soc. Sci. Ind. Neerl. (Sumatra  
9), vol. 8, p. 2, 1860 (Benculen).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 506, 1860 (Amboina; Moluccas;  
Ceylon). — Bleeker, Ned. Tijds. Dierk.,  
vol. 1, p. 240, 1863 (Obi).

(— Martens, Preuss. Exped. Ost Asien, vol. 1, p. 395, 1876  
(Manila & Batjan).  
— Schmeltz, Cat. Mus. Godeffroy,  
No. 4, p. 18, 1869 (Kandavu). — Peters,  
Monatsh. Akad. Wiss. Berlin, p.  
836, 1876 (1877) (New Britain).  
— Meyers, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 26, 1885 (Ternate).  
— Ramsay and Ogilby, Proc. Linn. Soc.  
New South Wales, ser. 2, vol. 1, p. 8, 1886  
(Strickland River, New Guinea).



<sup>129</sup>  
Cuvier Siaena russelii (Cuvier)

Ambrina russelii Cuvier, Règne  
Animal, ed. 2, vol. 2, 1829, p. 174.

(In Qualan Katchelee Russell, Fishes  
of Coromandel, vol. 2, 1803, p. 13, pl.  
118. Vizagapatam.) (Ambrina misprint.)

Ambrina russelii Cuvier, Hist. nat.

Poiss., vol. 5, 1830, p. 178 (Coromandel).

<sup>1</sup><sub>m</sub> Richardson, Ichth. China Japan, 1846,  
p. 226 (China Seas, Canton). <sup>1</sup><sub>m</sub> Günther,

Cat. Fishes Brit. Mus., vol. 1, 1859, p. 278

(<sup>1</sup><sub>m</sub> Kner, Reise Novara, Fische, 1865, p. 131 (Ceylon).  
(Malayan Peninsula). <sup>1</sup><sub>m</sub> Day, Fishes of

India, pt. 2, 1876, p. 153, pl. 43, fig. 4;

Fauna British India Fishes, vol. 2,

<sup>1</sup><sub>m</sub> Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 500 (Manila; Luzon).  
1887, p. 110. <sup>1</sup><sub>m</sub> Jordan and Seale, Bull.

Bur. Fisher., vol. 26, 1906 (1907), p.

(Cavite). <sup>1</sup><sub>m</sub> Evermann and Seale, Bull.

Bur. Fisher., vol. 26, 1906 (1907), p. 87

(San Fabian). <sup>1</sup><sub>m</sub> Girant, Service Océanogr.  
Pêch. Indo Chine, 6<sup>e</sup> note, 1924, p. 16 (169) (Hué River).



- Gogorza, Anal. Soc. Españ. Hist. Nat.  
Madrid, vol. 17, p. 291, 1888 (Manila Bay).
- Day, Fauna British India, Fishes,  
vol. 2, p. 194, fig. 66, 1889.



Amia savayensis Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, 1905 (1906), p.  
239, fig. 33 (Apia and Pago Pago, Samoa).  
— Evermann and Seale, Bull. Bur. Fisher.,  
vol. 26, 1906 (1907), p. 72 (Bacon). —  
Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912,  
p. 497 (Okinawa). — Fowler, Proc. Acad.  
Nat. Sci. Phila., 1918, p. 27 (Philippines);  
Copeia, no. 58, June 18, 1918, p. 63 (Philippines);  
Bishop Mus. Bull., no. 22, 1925, p. 32  
(Samoa).

Apogon nubilus Garman, Bull. Mus.  
Comp. Zool., vol. 39, 1903, p. 229. Suva, Fiji.

Apogon gardineri Regan, Trans. Linn. Soc.  
London, ser. 12, vol. 12, 1907, p. 227.

Cargados Carajoz, Indian Ocean, 30  
fathoms.



— Fowler, Journ. Acad. Nat. Sci.  
Philadelphia, ser. 2, vol. 12, p. 517,  
1904 (Padang). — Jordan and  
Seale, Proc. U. S. Nat. Mus., vol. 28,  
p. 777, 1905 (Negros). — Smith and  
Seale, Proc. Biol. Soc. Washington,  
vol. 19, p. , 1906 (Mindanao).  
— Jordan and Seale, Bull. Bur.  
Fisher., vol. 26, p. 15, 1906 (1907)  
(Cavite). — Evermann and Seale,  
Bull. Bur. Fisher., vol. 26, p. 69,  
1906 (1907) (San Fabian). —  
Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, p. 254, 1907  
(1908) (Iloilo; Manila; Lubang);  
Bur. Sci. Pub., Manila, vol. 1,  
p. 22, 1910 (reference).



Brown, little paler below.

Back and upper side with 9 broad neutral dusky, oblique bands, counted vertically, all crossing lateral line and posterior broader. Fins brown, front of anal and ventral dusky terminally.

Arabia, Oman, Natal, South Africa.

~~53045~~ A. N. S. P. Natal coast

825

1925 south, in 20 fathoms. H. W. Bellmarley.  
Length 332 mm.

10  
pr

Differs from Sciaenops capensis in that the dark bands are less oblique, as dark band from pectoral axil extends to last dorsal rays (not middle) or upper part of caudal peduncle.



— Jordan and Starks, Ann. Carnegie Mus., vol. 11, no. 3-4, p. 444, November 5, 1917 (Ceylon). — Regan, Ann. Durban Mus., vol. 2, p. 76, 1917-20 (Natal). — Fowler, Copeia, no. 58, p. 63, June 18, 1918 (Philippines); Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 219, 1925 (Delagoa Bay); vol. 79, p. 273, 1927 (Vigan; Orani; Orion; Philippines); Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, p. 182, September 30, 1928 (Bombay); Mem. Bishop Mus., vol. 10, ~~pp~~ p. 154, 1928 (compiled); ~~Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 607, 1929 (Hong Kong)~~. — Whitley, Journ. Pan Pac. Res. Inst., vol. 3, no. 1, p. 12, January-March 1928 (Santa Cruz Islands).



Depth  $2\frac{7}{8}$ ; head  $3\frac{1}{8}$ , width  $2\frac{1}{10}$ .  
Snout  $3\frac{1}{4}$  in head; eye  $4\frac{1}{8}$ ,  $1\frac{1}{4}$  in  
snout,  $1\frac{1}{8}$  in interorbital; maxillary  
reaches opposite front pupil edge,  
expansion  $3\frac{1}{4}$  in eye, length  $2\frac{2}{5}$  in  
head; chin with barbel  $1\frac{1}{2}$  of pupil,  
2 pores each side and snout end  
with 6; interorbital  $4\frac{1}{2}$  <sup>in head</sup>, convex.  
Gill rakers 5+11, short points.

Scales 47 in lateral line to caudal  
base and 17 more out over caudal; 8  
above, 11 below, 42 predorsal. Scales  
with 14 or 15 basal radiating striae;  
73 to 96 apical points, with 4 or 5  
transverse rows of basal elements;  
circuli fine.

D. X-I, 28, I, fourth spine  $2\frac{1}{8}$  in  
head, eighth ray 3; A. II, 7, I, second  
spine  $3\frac{1}{8}$ , second ray  $2\frac{2}{3}$ ; caudal  
 $1\frac{2}{3}$ ; pectoral  $1\frac{1}{2}$ ; ventral  $1\frac{7}{8}$ .



— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 81, p. 607, 1929  
(Hong Kong); Mem. Bishop Mus.,  
vol. 11, No. 5, p. 327, 1931 (reference).

— Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 6, p.  
339, ~~4~~ figs. 71-72, 1931 (Nias;  
Tandjong Priok; Lombok; Sumbawa;  
Kota Bharu; Makassar; Saleyer;  
Amboin; Ceram; Waigiu; Ceylon).

— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, p. 73, fig. 9  
(young), 1934 (Sanoer, Den Pasar  
and Benoa, Bali), p. 454 (Durban,  
Katal); Mem. Bishop Mus., vol. 11,  
No. 6, p. 406, 1934 (Wood Lagoon, New  
Guinea; Guadalcanar, Solomons).



Camel 179

1072

Sciaena striata (Boulenger)

Umbrina striata Boulenger, Proc. Zool. Soc. London, 1887, p. 660. Muscat, East Arabia; 1889, p. 245 (Muscat).  $\frac{1}{m}$

Gilchrist and Thompson, Ann. South Afr. Mus., vol. 6, 1908-11, p. 181 (Natal).

$\frac{1}{m}$  Jugmayer, Abhandl. K. Bayer. Akad. Wiss., Math.-physik. Klasse, vol. 26, 1913, p. 12 (Oman).  $\frac{1}{m}$

Gilchrist and Thompson, Ann. South Afr. Mus., vol. 11, 1911, p. 58 (Oman); Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 351 (compiled).  $\frac{1}{m}$

Barnard, Ann. South Afr. Mus., vol. 21, pt. 2, 1927, p. 580 (East London; Natal coast).

Sciaena striata Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 248 (Natal coast in 20 fathoms).

Umbrina capensis (not Pappe) Van Bonde, Marine Surv. South Africa, Special Rep. 1, 1923, p. 15 (Natal).



Zeus argentarius (Forster) Schneider,  
Syst. Ichth. Bloch, p. 96, 1801  
 (type locality, Pacific Ocean). —  
Lichtenstein, Descript. Animal.,  
Forster, p. 288, 1844 (Tanna).

Gazza argentaria Günther, Cat.  
Fish. Brit. Mus., vol. 2, p. 506, 1860  
 (type). — Bleeker, Verslag. Kon.  
Akad. Wet. Amsterdam, ser. 2, vol.  
 2, p. 293, 1868 (Rio, Bintang). —  
Günther, Journ. Mus. Godeffroy,  
 vol. 5, pt. 11, p. 144, pl. 91, fig. 3,  
 — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 26, 1865 (Calebes;  
 1876 (types) <sup>V</sup> — Beaufort, Bijdr.  
Dierk. Amsterdam, vol. 19, p. 120,  
 1913 (Majalibit Bay, Waigiu).  
 — Day, Fauna British India, Fishes,  
 vol. 2, p. 195, 1889.



Opercle and pectoral axil blackish.  
Spinous dorsal and ventrals black.  
~~Soft dorsal~~ and anal with black  
edges. Caudal with dusky edge.  
According to Day bands more  
numerous with age, being outer  
edges of wide bands in young.  
Length to 420 mm. (Barnard.)

Natal coast, Persian Gulf, Indian  
Sea.



Gazza argentarius Fowler and  
Bean, Proc. U. S. Nat. Mus.,  
vol. 62, art. 2, p. 24, 1922 (Tabaco).



Depth 3 or little less; head 3 or little more. Eye  $3\frac{1}{3}$  to  $5\frac{1}{2}$  in head, equals snout or interorbital; maxillary reaches  $\frac{1}{3}$  in eye; barbel  $\frac{1}{4}$  in eye; preorbital depth  $\frac{2}{3}$  to  $\frac{3}{4}$  in eye. Lower gill rakers 8 or 9, lowest mere knobs.

Scales ctenoid, 44 to 50 in lateral line; 7 above,  $1\frac{1}{2}$  below. Lateral line with bifurcate tubes, hinder ones simple, at least in young.

D. X, I, 27 to 29, third spine or third and fourth longest,  $\frac{2}{5}$  to  $\frac{3}{4}$  in head or in body depth; A. II, 7, second spine strong,  $\frac{1}{2}$  of head or  $2\frac{1}{2}$  in body depth; caudal rounded or cuneate.

Grayish or brownish, with silvery sheen. Nine wide, sinuous, oblique dark bands, wider than interspaces.



2414

Equula coma Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 76, 1835  
(in Komah karah Russell, Fishes of  
Coromandel, vol. 1, p. 60, pl. 63, 1803,  
type locality, Vizagapatam).

Leiognathus coma Jordan and  
Richardson, Bull. Bur. Fisher.,  
vol. 27, p. 253, 1907 (1908).



p. 16 (North Celebes).  $\frac{1}{m}$  Steindachner,  
Sitz. Ber. Akad. Wiss. Wien, Math.-

naturwiss. Klasse, vol. 102, pt. 1, 1893,

p. 238 (New Hebrides).  $\frac{1}{m}$  Elera, Cat.

Fauna Filipinas, vol. 1, 1895, p. 480

(Luzon, Batangas, Masugbu, Cebu).

<sup>Pinnip.</sup>  $\frac{1}{m}$  Boulenger, Ann. Mag. Nat. Hist.

<sup>London</sup>  $\frac{1}{m}$  London, series 6, vol. 20, 1897, p. 372

E. D. (Rotuma).  $\frac{1}{m}$  Seale, Occas. Papers

<sup>Youngs</sup> Bishop Mus., vol. 1, no. 3, 1901, p. 72

2 (Guam).  $\frac{1}{m}$  Juant, Service Océanogr.

Pêch. Indo Chine, 1921, note 6, p. 168

(Phu Yen).

Parupeneus trifasciatus Bleeker, Nederl.

Tijdschr. Dierk., vol. 1, 1863, p. 242

(name only).  $\frac{1}{m}$  Steindachner, Abhandl.

Senckenberg. Gesellsch., vol. 25, 1900,

p. 419 (Halmahera, Ternate, Batjan).

$\frac{1}{m}$  Weber, Siboga Exped., Fische, vol. 57,

1913, p. 295 (Sulu, Menado, Biaru,



Equula dentex Valenciennes, Hist.  
Nat. Poiss., vol. 10, p. 91, 1835 (type  
locality, Pondicherry; Mauritius;  
Amboina; Vanicolo; Seychelles).

— Peters, Archiv Naturg., p. 247, 1855

— Guichenot, Notes Ile Reunion,  
vol. 2, p. 26, 1862. — Kner, Reise  
Novara, Fische, p. 170, 1865 (Tahiti).  
Java;



Cur 179

Sciaena sinuata (Day)

Ambrina sinuata Day, Fishes of India, pt. 2, 1876, p. 182, pl. 46, fig. 1. Kurrachee; Supplement, 1888, p. 788 (places Ambrina striata Boulenger as synonym); Fauna British India, Fishes, vol. 2, 1889, p. 109, fig. 48 (Karachi, Muscat).  $\frac{1}{m}$

Gilchrist and Thompson, Ann. South Afr. Mus., vol. 6, 1908-11, p. 182 (26 fathoms Dimatikulu, Conical Hill N. W.  $7\frac{1}{2}$  miles).  $\frac{1}{m}$  Zugmayer, Abhandl. Kon.

Bayer. Abad. Wiss., math.-physik. Klasse, vol. 26, 1913, p. 12 (Mekehan).  $\frac{1}{m}$

Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 351 (compiled).

$\frac{1}{m}$  Barnard, Ann. South Afr. Mus., vol. 21, pt. 2, 1927, p. 579 (Katal).



Gazza tapeinotoma Bleeker,  
Nat. Tijds. Ned. Indië, vol. 4, p.  
260, 1853 (type locality, Priaman,  
Sumatra; Batavia, Java);  
vol. 5, p. 234, 1853 (Ceram), p.  
544 (Meauwen Bay, Java);  
vol. 6, p. 373, 1854 (Anjer), p.  
457 (Amboina); vol. 7, p. 228,  
1854 (Manado, Celebes), p. 312  
(Anjer, Tjiringin, Djungkulon),  
p. 361 (Batjan); vol. 8, p. 393, 1855  
(Amboina); vol. 9, p. 432, 1855  
(Groot Albi); vol. 12, p. 215, 1856  
(Nias), p. 293 (Boleling, Bali);  
Act. Soc. Sci. Ind. Néerl., ~~no.~~ vol. 1,  
no. 3, p. 4, 1856 (Manado); vol. 1,  
no. 5, p. 6, 1856 (Amboina); vol.  
3, no. 9, p. 4, 1857-58 (Trussan), p.  
6 (Siboga).



$2\frac{1}{2}$  in body depth; A. II, 7, second spine stout, 3 in head or  $3\frac{1}{2}$  in body depth and  $\frac{1}{2}$  to  $\frac{2}{3}$  longest ray; caudal subtruncate in adult.

Grayish above, whitish below, with silvery sheen, with 17 to 20 more or less distinct, dark, oblique, somewhat wavy streaks, narrower than intervals. Pectoral axil dark. Spinous dorsal and ventral blackish, other fins grayish, soft dorsal with dark edge. Length to 700 mm.

(Barnard.)

South Africa.

Barnard distinguishes this species from Sciaena cirrhosa by 2 or 3 more dorsal rays, lower spinous dorsal, less distinct stripes and not blue bordered with black in lateral line.



hat. Tijds. Ned. Indië, vol. 16, p.  
407, 1858 (Japara, Java); vol. 17,  
p. 143, 1858-59 (Boleling, Bali);  
Act. Soc. Sci. Ind. Neerl., vol. 5,  
no. 8, p. 2, 1858-59 (Tobariri,  
Celebes); hat. Tijds. Ned. Indië,  
vol. 18, p. 353, 1859 (Bawean), p.  
361 (Blingin, Banka); vol. 19, p.  
435, 1859 (Sumbawa); vol. 20, p.  
206, 1859-60 (Boleling, Bali);  
Verslag. Kon. Akad. Wet.  
Amsterdam, vol. 12, p. 31, 1861  
(Singapore).



1885  
vol. 86, pt. 1, 1882, p. 61, pl. 1 (Red Sea  
at Suez); Linzeiger Abad. Wiss.  
Wien, ~~Monatsschr. Naturg.~~ vol. 32,  
nr. 24-25, November 21, 1895, p. 259  
(Suez).

Depth  $2\frac{1}{2}$  to 3; head 3 to  $3\frac{1}{2}$ . Eye  
4 to  $4\frac{3}{4}$ ,  $1\frac{1}{3}$  in snout,  $1\frac{1}{4}$  in  
interorbital; maxillary reaches eye  
center, length  $2\frac{4}{5}$  in head; barbel  
4 in eye; preorbital depth not quite  
equal to eye. Gill rakers 8 or 9 on  
lower front arch, lower ones mere  
knobs.

Scales 52 to 55 in lateral line,  
9 to 11 above, 16 to 18 below; scales  
ctenoid, also same on head and  
breast. Lateral line 3 to 5 branched  
in tubes.

D. X, I, 24 or 25, third spine or third  
and fourth longest, about 2 in head or



— Fowler, Journ. Acad. Nat. Sci.  
Philadelphia, ser. 2, vol. 12, p.  
517, pl. 15, upper fig. to right,  
1904 (Padang). — Evermann  
and Seale, Bull. Bur. Fisher.,  
vol. 26, p. 69, 1906 (1907) (Bulan,  
Philippines).

Gazza



Can 29

Sciaena capensis (Pappe)

1157

Umbrina capensis Pappe, Synopsis  
Edible Fishes Cape, ed. 1, 1853, p. 16. False  
Bay.  $\frac{1}{m}$  Castelnau, Mém. Poiss. Afrique  
Mustral, 1861, p. 10 (Simon's Bay).  $\frac{1}{m}$   
Synopsis Edible Fishes Cape,  
Pappe, ~~op. cit.~~, ed. 2, 1866, p. 11 (False  
Bay).  $\frac{1}{m}$  Beyan, Ann. Natal Mus.,  
1908, p. 24 (Bird Island).  $\frac{1}{m}$   
Silchrist and Thompson, Ann. Durban  
Mus., vol. 1, pt. 4, 1917, p. 351 (compiled).  
 $\frac{1}{m}$  Thompson, Marine Biol. Rep. South  
Africa, vol. 4, 1918, p. 78.  $\frac{1}{m}$  Barnard,  
Ann. South African Mus., vol. 21, pt. 2,  
1927, p. 578 (False Bay, Agulhas Bank,  
Algoa Bay, 50 fathoms).

Umbrina cirrhosa (not Linnaeus) Günther,  
Cat. Fishes Brit. Mus., vol. 2, 1860, p. 274  
(Algoa Bay).  $\frac{1}{m}$  Steindachner, Sitzb. Ber.  
Akad. Wiss. Wien, math.-naturw. Klasse,



Sparus scombroides (Forster)  
Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 507, 1860 (name in  
synonymy).

Chromis scombroides (Forster)  
Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 507, 1860 (name in synonymy).



1058

line, tubes with 3 to 5 branches;  
8 or 9 above, 17 or 18 below.

D. I, I, 24 to 26, third or third and  
fourth spines longest, about  $\frac{2}{5}$   
body depth or equals head; A.  
II, 7, second spine strong or  $\frac{2}{5}$  of  
head; caudal subtruncate.

Brownish, probably with silvery  
sheen in life, with narrow, wavy,  
oblique, light streaks, much  
narrower than interspaces. Opercle  
often with dark blotch. All <sup>first</sup> dark  
brown, especially spinous dorsal,  
ventral and anal, which blackish.  
Length to 350 mm. (Barnard.)  
hatal.



Equula dispar De Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, no. 3,  
p. 542, November 29, 1884 (type  
locality, Cape York). — Saville  
Kent, Prelim. Rep. Food Fish.  
Queensland, p. 10, 1889; Great  
Barrier Reef, p. 369, 1893  
(reference).

Leiognathus dispar McCulloch  
and Whitley, Mem. Queensland  
Mus., vol. 8, p. 145, 1925 (reference).  
— McCulloch, Austral. Mus.  
Mem., no. 5, p. 212, 1929 (reference).

Gazza dispar Whitley, Mem.  
Queensland Mus., Vol. 10, pt. 2,  
p. 113, March 30, 1932 (type).



1137

Sciaena robinsoni (Gilchrist and Thompson)

Umbrina robinsoni Gilchrist and Thompson,  
Ann. South Afr. Mus., vol. 6, 1908-11,  
p. 182. Natal; Ann. Durban Mus., vol. 1,  
pt. 4, 1917, p. 351 (compiled). <sup>1</sup>/<sub>2</sub> Barnard,  
Ann. South Afr. Mus., vol. 21, pt. 2,  
1927, p. 519 (Natal).

Umbrina angustilineata Gilchrist and  
Thompson, Ann. South Afr. Mus., vol.  
11, pt. 2, 1911, p. 38. Natal; Ann. Durban  
Mus., vol. 1, pt. 4, 1917, p. 351 (compiled).

Depth 3 to  $3\frac{1}{2}$ ; head  $3\frac{1}{2}$ . Eye 4 to  
5 in head,  $1\frac{1}{3}$  to  $1\frac{1}{2}$  in snout,  $1\frac{1}{4}$  to  
 $1\frac{1}{3}$  in interorbital; maxillary reaches  
 $\frac{1}{3}$  in eye; barbel  $\frac{1}{4}$  of eye; preorbital  
depth slightly less in young to slightly  
greater than eye with age. Lower gill  
rakers 9 or 10, lowest mere knobs.

Scales ctenoid, 49 to 52 in lateral



Gazza achlamys Jordan and  
Starks, Ann. Carnegie Mus.,  
 vol. 11, nos. 3-4, p. 446, pl. 45,  
 November 5, 1917 (type locality,  
 Colombo, Ceylon).

Secutor insidiator (not Bloch)  
Fowler and Bean, Proc. U. S. Nat.  
 Mus., vol. , art. , p. , 19  
 (Benboelen, Sumatra).



reaches last dorsal rays or upper  
part of caudal peduncle. striata.

e.<sup>2</sup> no dark bands.

g.<sup>1</sup> Dorsal rays 24 to 27; barbel  
nearly equals eye.

russellii.

g.<sup>2</sup> Dorsal rays 28 to 30; barbel  $\frac{1}{2}$  of  
eye.

macroptera

b.<sup>2</sup> Scales cycloid; second dorsal spine  
equals or nearly equals body depth.

dussumieri.

a.<sup>2</sup> Ctenosciaena. Lower gill rakers 14.

dubia.

Can 13  
or more  
not



Depth  $1\frac{3}{4}$  to  $1\frac{7}{8}$ ; head  $1\frac{2}{3}$  to  $2\frac{4}{5}$ , width 2 to  $2\frac{1}{8}$ . Snout  $3\frac{1}{2}$  to 4 in head from snout tip; eye  $2\frac{3}{4}$  to  $2\frac{4}{5}$ , greater than snout or interorbital; maxillary reaches  $\frac{1}{8}$  to  $\frac{1}{5}$  in eye, expansion  $3\frac{1}{5}$  to  $3\frac{1}{4}$  in eye, length  $1\frac{3}{4}$  to  $1\frac{7}{8}$  in head from snout tip; interorbital  $3\frac{1}{8}$  to 4, low, nearly level medially. Gill rakers 6 + 14 to 16, lanceolate,  $1\frac{4}{5}$  in eye; gill filaments  $\frac{1}{2}$  of gill rakers.

Tubular scales 40 to 42 in lateral line, which complete, midway along side of caudal peduncle to caudal base. Scales absent from predorsal, area below spinous dorsal



and above lateral line, chest, breast and back to anal origin.

D. VIII, 16, I, second spine  $1\frac{3}{5}$  to 2 in total head length, first ray  $4\frac{2}{5}$  to  $5\frac{3}{5}$ ; A. III, 14, I, second spine  $1\frac{7}{8}$  to 2; caudal  $1\frac{1}{5}$ , well forked; least depth of caudal peduncle  $4\frac{7}{8}$  to  $5\frac{1}{4}$ ; pectoral  $1\frac{1}{2}$  to  $1\frac{7}{8}$ , rays II, 12; ventral rays I, 5, fin 2 in head.

Back brown or drab, lower half of body silvery white. Iris white. End of snout brown. Fins pale. Usually dark gray line along bases of dorsals in young.



Ceylon, East Indies, Philippines.  
Known by most of front half of  
body naked and the body deep,  
the depth less than 2.

Gazza achlamys was founded  
on examples 75 to 137 mm. long.  
It appears to be distinguished  
by its deep body, given as  $1\frac{4}{5}$   
and front half of body scaleless.  
These alleged characters do  
not seem to me valid, as I  
find young examples more  
slender, while old ones are  
deep.



Eight examples. Aparri, Luzon.  
November 19, 1908. Length 42 to 64 mm.

Six examples. Baganga Bay,  
Mindanao. May 13, 1908. Length 91 to  
98 mm.

One example. Basud River, Luzon.  
June 15, 1909. Length 27 mm.

15502, 15503, 15823 to 15825.

Butuanan Island, east coast of  
Luzon. June 13, 1909. Length 47 to 77 mm.  
35 examples.

6753. Beach at village near  
Chase Head, Endeavour Strait, Palawan.  
December 22, 1908. Length 32 mm.

Three examples. Caiholo River,  
Ulugan Bay, Palawan. December  
29, 1908. Length 37 to 47 mm.

15504. Caracaran, Batan Island,  
east coast of Luzon. June 8, 1909.  
Length 66 mm.



have quite a reticulated appearance, due to the dark scale edges.

Some examples show a white line or pale streak from eye up until close below front dorsal rays. Also parallel broader white band from lower preorbital, along eye then below suprascapula back till opposite front of spinous dorsal. Frequently in such examples the dark intervening band is darker than the general body color, thus producing a dark band to the eye and postocular. Often such examples may also have a pale or light small spot on each scale of back and side a slightly darker saddle may follow the white one on the caudal peduncle anteriorly.



5991. Cavite market. December 1,  
1908. Length 86 mm. 2426

12329, 12331, 12333. Caxisigan  
Island. January 3, 1909. Length  
85 to 103 mm.

Three examples. Cotabato, below  
mouth of river, Mindanao. May 20,  
1908. Length 30 to 81 mm.

22543, 22544. Dagupan, Leyte.  
March 18, 1908. Length 99 to 100 mm.

~~125~~ examples. Lingayen Gulf,  
west of Luzon. May 11, 1909. Length  
28 to 82 mm.

20413. Malampaya River, Palawan.  
December 26, 1908. Length 58 to 96 mm.  
Thirteen examples.

One example. Mantalay, Mindoro.  
June 4, 1908. Length 31 mm.

One example. Mantaguin Bay,  
Palawan. April 1, 1909. Length 47  
mm.



1241

also dark brown band along side  
of snout to eye, then over postocular  
and upper side of trunk embracing  
lateral line, fading out at soft  
dorsal. Also below dark brown  
streak starts on cheek then  
continues back parallel same  
extent. Fins all more or less  
brownish, lower ones paler,  
although ventral darker brownish  
terminally and spinous dorsal  
dusky brown terminally.

<sup>Melanesia, Polynesia,</sup>  
Hawaiian Islands. A dull colored  
species, usually known by the whitish  
saddle on the caudal peduncle.  
It may easily be distinguished from  
Upeneus bifasciatus by this character,  
also the last dorsal and anal rays  
not prolonged or with distinct bands  
longitudinally. Preserved specimens



2427  
Four examples. Mantaguin  
Bay, Palawan. April 2, 1909.  
Length 48 to 85 mm.

Two examples. Matnog Bay.  
May 21, 1909. Length 25 to 40 mm.

One example. Hakoda Bay,  
river, Palawan. December 31, 1905.  
Length 42 mm.

21 examples. North end of  
Endeavour Strait, north west coast  
of Palawan. December 22, 1908.  
Length 26 to 50 mm.

25 examples. Off Daet, beach  
near anchorage. June 15, 1909.  
Length 34 to 43 mm.

<sup>Eleven</sup>  
~~Five~~ examples. <sup>Palawan</sup> ~~Palawan~~ Bay, <sup>Mindoro Strait</sup> ~~Palawan~~.  
December 11, 1908. Length ~~37~~<sup>26</sup> to 80 mm.

Twelve examples. Panabutan  
Bay, Mindanao. February 5, 1908.  
Length 22 to 41 mm.



lower preopercle edge. Tubercles of lateral line with 5 to 11 tubules. Scales with 5 basal radiating striae; 68 to 188 apical denticles, with 4 to 14 transverse series of basal elements; circuli fine.

D. VII - I, 8, I, third spine  $1\frac{3}{5}$  to  $1\frac{2}{3}$  in head, first <sup>branched</sup> ray 2 to  $2\frac{1}{8}$ ; A. II, 6, I, first branched ray 2; caudal  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , deeply forked, lobes pointed; least depth of caudal peduncle 3; pectoral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ .

Pale olivaceous brown above, below lighter to whitish. Iris yellowish brown. Barbels pale brown. On caudal peduncle close behind soft dorsal whitish saddle of 3 scales in extent, especially conspicuous in young. In young



23 examples. Port Jamelo, Luzon.  
July 12, 1908. Length 28 to 55 mm.

195 examples. Port Jamelo.

July 13, 1908. Length 24 to 52 mm.

Ten examples. Port San Vicente.

November 18, 1908. Length 17 to 29 mm.

18848, 18849, 22331. River at  
Pasacao. March 9, 1909. Length 64  
to 118 mm. Twelve examples.

8555. San Fernando, Union  
Province, Luzon. March 17, 1908.  
Length 65 mm.

One example. Sangley Point,  
Cavite, Luzon. March 23, 1908. Length  
55 mm.

Three examples. San Miguel  
Harbor, Ticao Island. April 21,  
1908. Length 90 to 120 mm. Poor.

20499. Santa Maria, Siquijor  
Island. August 11, 1909. Length  
80 mm.



Depth 3 to  $3\frac{1}{4}$ ; head  $2\frac{7}{8}$  to 3, width  $2\frac{1}{10}$  to  $2\frac{1}{5}$ . Snout 2 to  $2\frac{1}{4}$  in head; eye  $3\frac{1}{2}$  to  $4\frac{4}{5}$ ,  $1\frac{3}{5}$  to  $2\frac{1}{8}$  in snout, slightly greater than interorbital in young to  $1\frac{2}{5}$  with age; maxillary reaches  $\frac{3}{4}$  to  $\frac{7}{8}$  in snout, expansion  $1\frac{1}{4}$  to  $1\frac{2}{5}$  in eye, length  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in head; barbels reach opposite hind eye edge, length  $1\frac{3}{5}$  to  $1\frac{3}{4}$  in head; teeth uniserial, conic, short, broad, none on palate; interorbital  $3\frac{2}{5}$  to  $4\frac{1}{4}$ , broadly convex. Gill rakers  $5 + 23$ , lanceolate,  $1\frac{1}{5}$  in gill filaments which  $1\frac{2}{5}$  in eye.

Scales 27 in lateral line to caudal base and 2 more on latter; 3 above, 6 or 7 below, 12 or 13 predorsal forward to nostril; 3 rows ~~of~~ below eye on cheek to



2429

8774, 8776 to 8779, 9557. Santiago  
River, Pagapas Bay, Luzon. February  
20, 1909. Length 92 to 119 mm.

22494. Tacloban, Leyte.  
April 13, 1908. Length 74 mm.

Eight examples. Tacloban market.  
July 25, 1909. Length 68 to 103 mm.

Two examples. Tilig, Lubang  
Island. July 14, 1908. Length 33  
to 99 mm.

Ten examples. Ulugan Bay near  
mouth of Baheli River. December 28,  
1908. Length 42 to 66 mm.

One example. Varadero Bay.  
July 23, 1908. Length 34 mm.

Three examples. Verde del Sur  
Island, Palawan reefs and sand  
flat. April 6, 1909. Length 53 to 67 mm.

One example. Zamboanga. Dr. E. A.  
Mearns. Length 26 mm. As Xystaema  
oxyena. (With U. S. N. M., no. 57967.)



Bishop Inst., vol. 10, 1928, p. 228, pl. 20  
A. (Honolulu, Raiatea, Faté, Pearl  
and Hermes Reef, Laysan, Lisiansky,  
Polynesia?, Kauai); Proc. Acad. Nat.  
Sci. Philadelphia, 1929 (1930), p. 648  
(Honolulu).



22 examples. Kema, Celebes,  
Dutch East Indies. November 13, 1909.  
Length 33 to 50 mm.

Two examples. Sandakan <sup>market</sup> Bay,  
Borneo. March 2, 1909. Length 85 to  
90 mm.

12334. Tidore Island, south of  
Ternate. November 24, 1909. Length 97 mm.

A 1006. Locality not given. Length  
134 mm.



Coral<sup>29</sup> Pseudupeneus porphyreus jenkins  
Pseudupeneus porphyreus jenkins,  
Bull. U. S. Fish Comm., vol. 22, 1902 (1903),  
p. 454, fig. 22. Honolulu. <sup>1</sup>/<sub>29</sub> Snyder,  
Bull. U. S. Fish Comm., vol. 22, 1902 (1904),  
p. 527 (Hanalei Bay, Kauai, Honolulu).  
<sup>1</sup>/<sub>29</sub> Jordan and Evermann, Bull. U. S.  
Fish Comm., vol. 23, pt. 1, 1903 (1905), p.  
262, fig. 110 (Honolulu, Hilo). <sup>1</sup>/<sub>29</sub> Seale,  
Occas. Papers Bishop Mus., vol. 4, no. 1,  
1906, p. 51 (Raiatea).

Upeneus porphyreus Fowler, Copeia, no.  
112, Nov. 20, 1922, p. 83 (Hawaii). <sup>1</sup>/<sub>29</sub>.  
Jordan and Jordan, Mem. Carnegie  
Mus., vol. 10, no. 1, 1922, p. 52 (Hawaii).  
<sup>1</sup>/<sub>29</sub> Fowler, Bull. Bishop Mus., no. 22,  
1925, p. 26 (Honolulu). <sup>1</sup>/<sub>29</sub> Fowler and  
Ball, Bull. Bishop Mus., no. 26, 1927,  
p. 16 (Pearl and Hermes Reef, Laysan  
and Lisiansky). <sup>1</sup>/<sub>29</sub> Fowler, Mem.



U. S. N. M., No. 58997. San Fabian.<sup>2431</sup>  
Bureau of Fisheries (3808). Depth  
 $1\frac{7}{8}$ . Length 90 mm.

U. S. N. M., No. 72652. Palaboen,  
Ratoe, Wynboofs Bay, Java.  
October 1909. O. Bryant and W.  
Palmer. Length 135 mm. Depth  $1\frac{7}{8}$ .

U. S. N. M., No. 87986. Benboelen,  
Sumatra, December 17, 1925.  
Lieut. H. C. Kellers. Length 53 mm.  
Depth  $1\frac{4}{5}$ . As Leiognathus edentulus.

U. S. N. M., No. 88012. Benboelen,  
November 1925. ~~Lieut.~~ Lieut. H. C.  
Kellers. Length 28 to 46 mm.  
54 examples. As Secutor ruconius.  
Depth  $1\frac{3}{4}$  to  $1\frac{4}{5}$ .

~~U. S. N. M.~~ U. S. N. M., one example. Colombo,  
Ceylon. Capt. Putnam. Received  
September 30, 1859. Length 123 mm.  
Depth  $1\frac{3}{4}$ .



1656



Gazza equulaeformis Rüppell

Gazza equulaeformis Rüppell,  
 neue Wirbelth., Fische, p. 4, ~~pl.~~  
~~fig. 3~~ 1835 (type locality, Massana  
 - <sup>Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1135, 1849</sup>  
 Red Sea). — Bleeker, Nat. Tijds  
 hed. Indie, vol. 4, p. 261, 1853  
 (Priaman; Batavia); vol. 6, p.  
 51, 1854 (Sindangole, Halmahera);  
 vol. 7, p. 312, 1854 (Bantem; Anger);  
 vol. 8, p. 345, 1855 (Tiboe, Sumatra,  
 p. 437 (Bonthaian, Celebes); vol.  
 12, p. 293, 1856 (Boleling, Bali);  
 Act. Soc. Sci. Ind. Neerl., vol. 1,  
 no. 3, p. 4, 1856 (Manado), p. 9  
 (Macassar); vol. 1, no. 5, p. 75, 1856  
 (Lembaina); Nat. Tijds. hed. Indie,  
 vol. 13, p. 384, 1857 (Batjan);



Analysis of the species Optosur <sup>only</sup>

a. Sciaena. Lower gill rakers 5 to 10.

b. Scales ctenoid.

c. Dorsal rays 24 to 26.

d. Numerous oblique dark stripes, with 17 to 20 dark oblique somewhat wavy streaks, narrower than interspaces.

d.<sup>2</sup> Numerous oblique pale streaks.

capensis  
robinsoni

e.<sup>2</sup> Dorsal rays 27 to 31.

e. Body with dark bands.

f. Third or fourth dorsal spines  $2\frac{1}{3}$  to  $2\frac{1}{2}$  in head; 9 wide oblique sinuous dark bands, wider than interspaces, one from pectoral reaches middle of soft dorsal.

f.<sup>2</sup> Fourth dorsal spine  $2\frac{1}{8}$  in head; 9 broad neutral dusky oblique bands, posterior broader, one from pectoral



Act. Soc. Sci. Ind. Neerl., vol. 3,  
 no. 5, p. 2, 1857-58 (Macassar);  
 vol. 3, no. 9, p. 4, 1857-57 (Trussan);  
 Nat. Tijds. Ned. Indie, vol. 15, p.  
 200, 1858 (Goram), p. 242 (Singapore);  
 vol. 16, p. 26, 1858 (Tikoe); vol. 18,  
 p. 360, 1859 (Blinjir, Banka); vol.  
 20, p. 141, 1859-60 (Badjoa, Boni);  
 — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 506, 1860 (Amboyna; Moluccas;  
 Ned. Tijds. Dierk., vol. 1, p. 240, 1860 (Leylan);  
 — <sup>^</sup> Leach, 1863 (Obi); Verslag. Kon. Akad.  
 Wet. Amsterdam, ser. 2, vol. 2, p.  
 300, 1868 (<sup>Klunzinger, Verh. zool. bot. Ges. Wien, vol. 21, p. 468, 1871</sup> Waigiu) — Günther, <sup>(Red Sea)</sup>  
 Cruise of Curaçoa, p. 410, 1873  
 (Solomons). — Schmeltz, Cat. Mus.  
 Godeffroy, no. 5, p. 28, 1874  
 (Rarotonga). — Günther, Journ.  
 Mus. Godeffroy, vol. 5, pt. 11, p.  
 144, 1876 (Rarotonga; Solomons).



Cheilodipterus aquila Lacépède as  
the type of Sciaena is not acceptable  
as this species is not listed separately  
or as a distinct component in the  
Linnaean genus Sciaena.



- Bleeker, Arch. Néerl. Sci. Nat. Harlem, vol. 13, p. 38, 1878 (New Guinea). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore). — Klunzinger, Fische Roth. Meer., vol. 1, p. 108, 1884. — Day, <sup>Fishes</sup> ~~Fishes~~ of British India, vol. 2, p. 194, 1889. — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 26, 1885 (North Celebes). — Gogorza, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 17, p. 292, 1898 (Managua). — Gilchrist and Thompson, Ann. South Afric. Mus., vol. 6, p. 189, 1908-11 (Natal); Ann. Durban Mus., vol. 1, no. 4, p. 353, 1917 (reference).

- Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 273, 1927 (Ugan; Bulan); Mem. Bishop Mus., vol. 12, p. 154, 1928 (compiled); Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 144, 1935 (Sriracha, Siam).



1430

Body ovate, oblong. Snout prominent, with conspicuous pores. Chin with similar pores. Rather thick, short, single barbel on chin. Lower jaw little shorter than upper. Teeth in villiform bands in jaws, outer series above enlarged and no canines. Gill rakers few, short, often several below rudimentary. Pseudobranchiae present. Air bladder present. Lateral line with tubes more or less branched. Dorsal deeply notched or divided nearly as two fins, first spine very short. Anal spines strong, first short. Caudal rounded, truncate or emarginate.

Warm seas, sometimes running into rivers. Among Indo Pacific genera known chiefly by the presence of a distinct barbel at the chin. The restriction by Gill in 1861 of



Gazza aequilaeformis Day, Fishes  
of India, pt. 2, p. 244, 1876 (India,  
Sind).



186

Depth  $2\frac{2}{5}$  to  $2\frac{4}{5}$ ; head  $2\frac{1}{8}$  to  $2\frac{1}{3}$ , width  
2 to  $2\frac{1}{6}$ . Snout  $4\frac{1}{5}$  to  $4\frac{1}{2}$  in head from  
snout tip; eye  $2\frac{1}{8}$  to  $2\frac{3}{4}$ , greater than  
snout or interorbital; maxillary  
 $\frac{2}{3}$  to  $\frac{3}{4}$  in eye, expansion  $2\frac{2}{5}$  to  $2\frac{1}{2}$ ,  
length  $1\frac{2}{4}$  to  $1\frac{7}{8}$ ; teeth villiform,  
minute, in bands in jaws, on vomer  
and palatines; interorbital  $3\frac{1}{2}$  to  
 $3\frac{3}{4}$ , level; preopercle ridge entire,  
edge minutely serrate. Gill rakers  
6 + 20, lanceolate, several more as  
rudiments above and below; length  
greater than gill filaments or 2 in eye.

Scales 22 or 23 in lateral line  
to caudal base and 5 or 6 more on  
latter, 2 above, 6 below, 3 predorsal,  
2 rows of cheek scales; muzzle, including  
interorbital, maxillary and suborbital,  
naked. <sup>Scales with</sup> 14 to 23 basal radiating striae;



Gazza equuliformis Borodin,  
Bull. Vanderbilt Marine Mus.,  
 vol. 1, art. 3, p. 78, 1932 (Apia,  
 Samoa).

Rüppell, neue Wirbelth., Fische, pl. 1,  
 fig. 3, 1835. — Bleeker, Nat. Geneesk.  
Arch. Ned. Ind., vol. 2, p. 518, 1845  
 (Batavia). —

Gazza minuta (not Bloch) Bleeker,  
Verh. Batavia. Genoot. (makreel),  
 vol. 24, p. 85, 1852 (part). —

Fowler, Mem. Bishop Mus., vol. 11,  
 no. 6, p. 406, 1934 (part).

— Weber and Beaufort, Fish. Indo  
Austral. Archip., vol. 6, p. 339, 1931  
 (part).



Cont 130

Genus Sciaena Linnaeus

Sciaena Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p. 288. Type Sciaena cirrosa Linnaeus, designated by Bleeker, Arch. Néerland. Sci. Nat. Harlem, vol. 11, 1876, p. 326.

Sciæna Bonnaterre, Tabl. Ichth., 1788, p. LIV (114). Type Sciaena cirrosa Linnaeus. (Error.)

Umbrina Cuvier, Règne Animal, vol. 2, 1817, p. 297. Type Sciaena cirrosa Linnaeus, designated by Gill, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 86.

Attilus Gistel, Naturges. Thierwelt, 1848, p. 109. Type Sciaena cirrosa Linnaeus, monotypic.

Ctenosciaena Fowler and Bean, Proc. U. S. Nat. Mus., vol. 63, 1923, p. 15. Type Sciaena dubia Fowler and Bean, orthotypic.



Depth 2 to  $2\frac{1}{2}$ ; head  $2\frac{3}{4}$  to 3, width  $1\frac{7}{8}$  to  $2\frac{1}{8}$ . Snout 3 to  $3\frac{3}{4}$  in head from snout tip; eye  $2\frac{4}{5}$  to 3, greater than snout or subequal, greater than interorbital to subequal; maxillary reaches  $\frac{1}{5}$  to  $\frac{1}{3}$  in eye, expansion  $3\frac{2}{3}$  to 4, length  $1\frac{4}{5}$  to  $1\frac{9}{10}$  in head from snout tip; interorbital 3 to  $3\frac{1}{5}$ , broadly convex. Gill rakers 11 + 13, lanceolate.

Tubular scales 40 to 42 in lateral line, complete. Scales cover body.

D. VIII, 16, I, second spine  $1\frac{2}{3}$  to  $2\frac{1}{4}$  in total head length; A. III, 14, I, second spine 2 to  $2\frac{1}{8}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , forked; least depth of caudal peduncle



$4\frac{1}{2}$  to  $5\frac{1}{8}$ ; pectoral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ , rays  
II, 13; ventral rays I, 5; fin  
 $1\frac{2}{5}$  to 2 in head.

Brown above, sides and below silvery white. Upper lip edge and mandible below dusky. Iris white. Spinous dorsal and pectoral base dusky. Caudal gray, other fins whitish, with dark gray line close along bases of dorsal.

Red Sea, Zanzibar, Mozambique, Delagoa Bay, Natal, Madagascar, Bourbon, Mauritius, Seychelles, India, Ceylon, Andamans, Malaya, East Indies, Philippines, Siam, Formosa, Queensland, Melanesia, Polynesia.



2439

32 examples. Below mouth of  
Mindanao River, Cotabato,  
Mindanao. May 20, 1908. Length  
24 to 50 mm.

53 examples. Cotabato, Mindanao.  
May 20, 1908. Length 25 to 122 mm.

Two examples. Dagupan, Leyte.  
March 19, 1908. Length 58 to 75 mm.

Four examples. Davao, Mindanao.  
May 16, 1908. Length 24 to 39 mm.

Six examples. Lingayen Gulf,  
west coast of Luzon. May 11, 1909.  
Length 42 to 60 mm.

12330, 12332. Luzon shore  
Port San Vicente. November 13, 1908.  
Length 95 to 99 mm.

One example. Near mouth of  
Tayabas River, Luzon. February 25,  
1909. Length 66 mm.

Five examples. Paluan Bay,  
Mindoro. December 11, 1908. Length  
28 to 60 mm.



ray  $2\frac{7}{8}$  in head; A. II, 7, first ray  $2\frac{2}{3}$ , caudal  $1\frac{1}{5}$ , deeply forked, lobes sharp pointed; least depth of caudal peduncle  $2\frac{7}{8}$ ; pectoral  $1\frac{3}{5}$ ; ventral  $1\frac{2}{5}$ .

Body rosy, below paler. Iris rosy, edge of pupil golden. Large pale or whitish blotch on caudal peduncle behind dorsal 4 scales in extent and inclusive of lateral line. Fins rosy. Barbels golden? Length 202 mm. (Bleeker.)

Amboina, Dutch East Indies. Known from a single example. Apparently distinguished by its uniform colored fins, with large whitish saddle behind soft dorsal and the long barbels.



One example. Philippines.  
Length 40 mm.

22329. River at Pasacao,  
Luzon. March 9, 1909. Length 60 to  
125 mm. Fourteen examples.

8554. San Fernando, Union  
Province, Luzon. March 17, 1908.  
Length 50 mm.

11725. Santa Cruz, Marinduque  
Island. April 24, 1908. Length  
103 mm.

8793, 12635. Santiago River,  
Pagapas Bay, Luzon. February 20,  
1909. Length 74 to 118 mm.

One example. Tacloban market.  
July 25, 1909. Length 84 mm.



124 Pseudupeneus xanthospilus (Bleeker)  
~~Pomphrenus xanthospilus~~ Bleeker, Verhandl.  
Kon. Akad. Wetensch. Amsterdam, vol. 15,  
no. 3, 1875, p. 37. Ambona; Atlas Ichth.  
Ind. Néerland., vol. 9, 1877, pl. (3) 293,  
fig. 5.

Depth  $3\frac{2}{5}$ ; head 3. Snout  $1\frac{3}{4}$  in head;  
eye  $5\frac{2}{3}$ ,  $3\frac{1}{4}$  in snout; maxillary reaches  
 $\frac{2}{3}$  to eye, expansion slightly greater  
than eye or about  $2\frac{7}{8}$  in snout, length  
 $2\frac{7}{8}$  in head; barbel  $1\frac{1}{5}$ , reaches  
within 2 scales of ventrals; interorbital  
moderately high; preopercle edge entire.

Scales 30 in lateral line (28 on figure);  
2 above, 6 below, 3 rows on cheeks leaving  
very narrow naked strip along preopercle  
edge; 16 predorsal forward opposite front  
nostril.

D. VIII — I, 8, I, third and fourth spines  
subequal,  $1\frac{3}{5}$  in head, first branched



U. S. N. M., No. 39831. Singapore.  
Mus. Comp. Zool. (947). Length  
58 to 66 mm. Three examples.  
Depth  $2\frac{1}{4}$  to  $2\frac{1}{2}$ .

U. S. N. M., No. 52013. Negros.  
Dr. B. Dean. Length 32 to 93 mm.  
Three examples. Depth 2 to  $2\frac{1}{8}$ .

U. S. N. M., No. 56110. Philippines.  
Bureau of Fisheries (3947).  
Length 82 mm. Depth  $2\frac{1}{5}$ .

U. S. N. M., No. 56173. Mindanao.  
Bureau of Fisheries (4301).  
Length 78 mm. Depth 2.

U. S. N. M., No. 56231. Cavite.  
Dr. G. A. Lung. Length 77 to 144 mm.  
Four examples. Depth 2 to  $2\frac{1}{2}$ .

U. S. N. M., No. 72223. Iloilo.  
R. C. Mac Gregor. ~~One example~~  
Length 77 mm. Depth 2.



U. S. N. M., No. 56237.

Philippines. Bureau of Fisheries  
(3779). Length 137 mm. Depth  
 $2\frac{1}{5}$ . As Gazza tapeinosoma.

U. S. N. M., No. 56263.

Philippines. Bureau of Fisheries  
(8190). Length 123 mm. Depth  
 $2\frac{1}{5}$ . As Gazza tapeinosoma.

U. S. N. M., No. 72263. Lubang.  
R. C. McGregor. Length 80 mm.  
Depth  $2\frac{1}{8}$ .

U. S. N. M., No. 72651. Java.  
O. Bryant and W. Palmer. Length  
74 to 92 mm. Three examples.  
Depth  $2\frac{1}{8}$  to  $2\frac{2}{5}$ .

U. S. N. M., No. 76608. Formosa.  
Dr. F. Baker. Length 23 to 130 mm.  
Seven examples. Depth  $2\frac{1}{5}$  to  $2\frac{2}{5}$ .  
As Gazza argentarius.



2443  
U. S. N. Mus., No. 88011, Benboelen,  
Sumatra, November 1925.

Lieut. H. C. Kellers. Length  
58 mm. Depth  $2\frac{1}{4}$ . Predorsal  
naked. As Secutor insidiator.

U. S. N. Mus., one example.  
Colombo, Ceylon. Capt. Putnam.  
Received September 30, 1859.  
Depth  $2\frac{1}{3}$ . Length 110 mm.



A. h. S. P., five examples. Bombay.  
1925. Prof. F. Hallberg. Purchased.  
Length 64 to 137 mm.